

CALIFORNIA RESOURCES AGENCY
AND
CALIFORNIA ENERGY COMMISSION
AND
CALIFORNIA PUBLIC UTILITIES COMMISSION

JOINT WORKSHOP ON
PREPARATION FOR THE GOVERNOR'S POTENTIAL DECISIONS
ON OFFSHORE LNG IMPORT TERMINAL APPLICATIONS AND
LNG ACCESS ISSUES AND DELIVERABILITY OF SUPPLY

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1 P R O C E E D I N G S

2 COMMISSIONER DESMOND: Good morning.

3 I'd like to welcome everyone here today to join us
4 in a workshop on LNG Access Issues and
5 Deliverability of Supply.

6 Just by way of background I wanted to
7 take a few moments and let people know what we're
8 hoping to accomplish over the next two days with a
9 series of speakers.

10 First, I want to acknowledge Secretary
11 Mike Chrisman, who is here in the audience, who is
12 going to join us for a few hours this morning.
13 And Mike -- actually he's stepped outside on the
14 telephone, but he'll be back in here in a moment.

15 There is an interagency LNG Working
16 Group that has been focused on these issues now
17 for quite some time, consisting of many members.
18 And the staff of the Energy Commission has been
19 actively involved in every step of the way,
20 dealing with these issues.

21 And when we talk about LNG, typically
22 the concerns or questions fall into three broad
23 categories. They deal with either safety issues,
24 environmental impact, and then the third issue,
25 which is the purpose of today, is to talk about

1 economics. And specifically, if there is LNG
2 coming to California what can we do, or what
3 questions do we need to ask ourselves, to ensure
4 that California consumers benefit economically
5 from the introduction of additional sources of
6 supply.

7 And, having said that, the questions in
8 and around the deliverability of that supply, as
9 well as related issues, along with financing and
10 other types of terminal access issues.

11 So I first would like to acknowledge the
12 work of the staff, who, if you have not seen
13 already, has done a very thorough job of preparing
14 bibliography of materials. There are two stacks
15 of either printouts of what's contained on the
16 Notice, and the other information. There's plenty
17 of reading material and backup.

18 But we have two very exciting, very
19 content rich days ahead of us with speakers that
20 have come from different parts of not just the
21 United States but around the globe, to talk with
22 us and speak to us today and tomorrow about these
23 very issues.

24 Commissioner Boyd, did you want to add
25 some comments?

1 COMMISSIONER BOYD: Thank you, Chairman
2 Desmond. I just want to add my welcome to yours.
3 You very comprehensively covered the purpose of
4 today. I just want to comment that, as one of the
5 two Commissioners involved in the IEPR process,
6 and the Commissioner who chaired the first IEPR in
7 2003, as well as Chair of the Natural Gas
8 Committee, I have an intimate interest in the
9 subject we're addressing today.

10 And on your reference of supply I would
11 point out, in the 2003 IEPR, the Energy Commission
12 went on record as saying that, in its' opinion,
13 more natural gas supply was needed in California's
14 future, to fuel our economy and meet the needs of
15 our citizens. And we just indicated that we were
16 open to receiving natural gas in any geographic
17 direction, north, south, east or west.

18 West, of course, meaning the pipeline
19 from the west that is LNG, and that is an interest
20 to us in order to meet our needs, and as you
21 indicated, should it prove to be viable and come
22 our way we want to make sure we've addressed all
23 of the questions that you pose.

24 So I look forward to what we're going to
25 learn here over the next couple of days. Thank

1 you.

2 COMMISSIONER DESMOND: Thank you,
3 Commissioner Boyd. One last item, for those
4 listening in, this workshop is being both webcast,
5 it will be archived and available on the website.
6 We have a Court Reporter today as well, and we
7 will be issuing a workshop report.

8 Any questions that we receive from
9 members of the public that we do not have an
10 opportunity to answer, we will respond in writing,
11 and those responses will be included in the final
12 report. And then that will be made available and
13 I believe that is scheduled to be completed in
14 mid-July.

15 And again, just to sort of close my
16 opening remarks, the purpose of this is to
17 establish a record, to help inform the Governor so
18 that he can make an informed decision if in fact
19 there is a terminal that makes its way through the
20 approval process and comes before the Governor.

21 So it is in keeping with that spirit
22 that we are focusing on these macro issues. They
23 are not specific to any individual project, but
24 again, economically, how does California ensure
25 that consumers will benefit if there is natural

1 gas imported in the form of LNG.

2 David?

3 MR. MAUL: Good. Thank you, Chairman
4 Desmond. I'm David Maul, Manager of the Natural
5 Gas and Special Projects Office at the Energy
6 Commission.

7 And with us today, I'd also like to
8 introduce behind us at the far table, Harvey
9 Morris from the California Public Utilities
10 Commission, Monica Schwebs from our legal staff at
11 the Energy Commission, and then Mike Smith,
12 Adviser to Commissioner Boyd, and Scott
13 Tomashevsky, Adviser to Chairman Desmond.

14 Also, in putting this workshop together
15 we've been trying to coordinate with several other
16 public agencies that have expertise in this area.
17 So not only is this being sponsored by The
18 Resources Agency in cooperation with the
19 California Energy Commission and the CPUC, we also
20 have worked very closely with the US Maritime
21 Administration.

22 Keith Lesnick, who is the Director of
23 Deep Water Port Projects, will be here tomorrow.
24 He actually is flying here right now but his plane
25 got delayed due to weather, so he won't arrive

1 until later this afternoon, but he will be sitting
2 with us and learning with us the entire time
3 tomorrow.

4 We also have been talking to FERC and
5 seeking guidance from them as well. They
6 obviously are looking at onshore access issues.
7 This workshop deals with offshore access issues,
8 and so we're sharing our information with them and
9 we're also seeking guidance with them, along with
10 the US Department of Energy Office of Fossil
11 Fuels.

12 They actually wanted to be out here
13 today with us but their travel budgets are
14 somewhat limited, due to current congressional
15 issues going on with them. But we are attempting
16 to coordinate with all the various appropriate
17 agencies to make sure we learn together and we do
18 something in the context of not only California's
19 needs but the national needs as well.

20 As far as logistics go, we have a very
21 tight agenda. We have a lot of tremendously
22 powerful speakers coming today. For those who are
23 speaking, we have plenty of time, but I will be
24 trying to keep all of us on time with our little
25 one minute and stop sign.

1 We do try to respect your time in the
2 audience, knowing that we would like to get out of
3 here in time for lunch and then come back and then
4 finish up in time at the end of the day. So we
5 respect your time in coming here today and I'll do
6 my best to keep us all on time during the course
7 of the day.

8 Restrooms are outside and to your left.
9 There is a little coffee station across the hall
10 as well as across the street. Lunch spots are on
11 the table, and Mary Dyas -- raise your hand back
12 there -- has a list of restaurants, they're on the
13 front table if you'd like to go out real quick for
14 lunch or dinner we can take care of you that way.

15 On the agenda also we have time for
16 Public Comment, for anybody who is here in the
17 audience and wishes to make a public comment. And
18 Penny, would you mind standing up real quickly?
19 Penny is from our Public Adviser's Office, Penny
20 has a series of blue cards.

21 If anybody would like to make a public
22 comment Penny can come around and give you a blue
23 card, you can fill it out, and then at the end of
24 either today or tomorrow we'll go through and take
25 all the blue cards as time allows, and you can

1 also fill out a blue card later today and tonight,
2 we won't actually call on them until the end of
3 today and then the end of tomorrow, but we have
4 reserved quite a bit of time for public comment.

5 Also, if you're listening on the
6 webcast, hopefully you can hear our voices right
7 now. If you're having difficulties finding the
8 presentations, if you go to the Commission's main
9 web page, on the left hand side it says "LNG
10 Proceeding", and then click on that.

11 And then, as that comes up, you'll see
12 on the right hand side "June 1 and 2 workshop",
13 click on that for the workshop, notice and the
14 agenda. But go back to that page and click on the
15 left hand side under "documents." And then, when
16 you click on that you'll find all the
17 presentations that we have received electronically
18 as of early this morning.

19 And you can follow along with the
20 presenters as you're listening to their voices.
21 You can actually download the Powerpoint
22 presentations, their various presentations, and
23 follow them as the presenters go along. And each
24 presenter, as they talk, will say what page their
25 on in the Powerpoint view pointer on the materials

1 they enhance, and you can follow along with them.

2 I think we are ready to start. Any last
3 comments? Okay.

4 Well, our first panel deals with
5 background infrastructure. Even though most of
6 the workshop deals with market issues, financial
7 issues, physical flow issues, and operations for
8 offshore terminals, as Chairman Desmond said, just
9 to help set the stage.

10 We have three speakers to give you some
11 physical background for what happens between the
12 customers on one end and the LNG coming to our
13 shores on the west coast, potentially, on the
14 other side.

15 Very quickly, and Henry, if I can ask
16 you to click through the slide for me real quickly
17 there. I'm just going to very quickly describe
18 for you what the projects are, it's just going to
19 take two minutes. We have some maps in the back
20 of the wall there showing some potential LNG
21 projects on the west coast. And we look at
22 everything on the west coast because it is an
23 integrated natural gas pipeline network system.

24 And we'll quickly look at those projects
25 and talk about them very briefly. As Chairman

1 Desmond said, we are not here to talk about any
2 individual project and its' environmental impacts,
3 or any particular aspect about an individual
4 project.

5 That is being handled by other agencies
6 in other forums, but we are here to look at
7 general policies dealing with all of the offshore
8 projects, and not necessarily the onshore
9 projects. Keith Lesnick from MARA tomorrow will
10 give us a rundown dealing with the offshore
11 projects and how the policies are being handled,
12 and how the context of this entire workshop can be
13 considered.

14 Very quickly, this is a map showing the
15 LNG projects that we are currently aware of that
16 have publicly been announced in the California and
17 the Mexico area. As you can see, there are
18 several offshore projects. We have two in the
19 California area, the Crystal Clearwater Port and
20 the BHP Cabrillo Port Project, both off the
21 Ventura coast area.

22 The other projects are onshore, so are
23 not the subject of this particular project. There
24 is one matter of confusion that I'm sure we're
25 going to do the best we can to confuse people, we

1 have one project, it is potentially offshore, that
2 would be the Chevron project, they are currently
3 exploring something on the west coast.

4 Technically they are offshore because
5 they are not on land, but they are actually within
6 the state's three mile limit, therefore they would
7 be considered an onshore project, according to
8 federal law, and not subject to the Deep Water
9 Port provisions, so they were not under this
10 policy review that we're doing today.

11 When you get into Baja, we are looking
12 at a couple of offshore projects. Chevron does
13 have an offshore project that is in Baja, so again
14 it's not subject to this, but it is an offshore
15 project. And there was a new one, announced a few
16 months ago, the Moss-Maritime project, also off
17 Rosarita Beach.

18 The other projects in the Mexico area,
19 going down to the Semptra Cell project, and the
20 Sonora project, are both onshore projects.

21 The next map shows basically north of
22 California. We have several projects looking in
23 Oregon. There was a previous project in
24 Washington state but it has since relocated down
25 to Oregon as well as two projects up in British

1 Columbia. All those projects are onshore
2 projects, so therefore would not be subject to the
3 Deep Water Port Act, and especially the projects
4 in Canada would not be subject to the Deep Water
5 Port Act.

6 We do have a speaker tomorrow, Lawrence
7 Smith, who can talk about issues dealing with
8 NAFTA in the event that LNG is imported from
9 another country, either Canada or Mexico, into the
10 United States, and particularly into California.

11 That's just a very quick review of the
12 physical aspects of the terminals, and I'd like to
13 turn it over to John Dagg, who is our Director of
14 Gas Operations for Southern California Gas
15 Company, to talk about the gas infrastructure in
16 the Southern California area.

17 Obviously, that is the pipeline network
18 that would connect any terminal that would be
19 located either onshore or offshore with the
20 customers, either SoCal customers or individual
21 customers that would purchase gas from them.

22 And John, we appreciate your coming up
23 here today. We know you have a rather busy day
24 and you're probably on the phone quite a bit
25 making sure gas does flow where it's supposed to

1 flow, so hopefully the phone won't ring.

2 Actually, as a quick reminder, I forgot
3 to tell you about Maul's cell phone rule. I have
4 my cell phone right here, it's on the vibrator
5 mode.

6 And the rule I have is -- I see Mary,
7 you're back there still -- if your cell phone goes
8 off, and we hear it and I can see who you are, you
9 owe Mary \$5 to our lunch kitty. If your cell
10 phone goes off, and we hear it and you answer it
11 while you're in this room, you owe us \$100 to the
12 lunch kitty. So I suggest you turn your cell
13 phones to silent and answer it outside the room,
14 so we don't disturb anybody else here.

15 MR. DAGG: Can I give you \$20 right now?

16 (laughter)

17 MR. MAUL: Okay, John, please go ahead.

18 MR. DAGG: I'm just going to talk
19 briefly about the onshore natural gas
20 infrastructure and then a little bit about the
21 operations, which will set the stage for David
22 Taylor, tomorrow afternoon, who will be talking
23 about upsets of supply. So a little bit about the
24 infrastructure and operations, to get us to that
25 point.

1 Just a quick overview. Southern
2 California Gas Company, all of Southern California
3 except a few isolated areas, 5 million plus
4 meters, San Diego Gas and Electric, 800,000 plus
5 gas meters.

6 And we operate an integrated system.
7 And by that I mean we've got transmission
8 pipeline, we've got compressor stations, and we've
9 got storage fields that come into play in
10 operating the natural gas infrastructure in
11 Southern California.

12 Hopefully you see a little bit on this
13 map here. Southern California, basically the
14 system -- this is page 3, by the way -- the system
15 was designed to take gas towards the LA Basin
16 originally. So when we talk about the layout of
17 the system, keep that in mind, as opposed to where
18 we see potentially some of the new supply sources
19 coming in.

20 On this map here you'll see existing
21 capacity receipt points. And the next slide will
22 show a summary of those. But all our existing
23 supplies come in in what I call a non-load center,
24 or certainly in the outlying parts of our system,
25 out at the Colorado River/Blythe/Needles area, up

1 in the Kramer Junction area, which is north of
2 Adelanto, and then up in the San Joaquin Valley.

3 That's basically where all our major
4 supply points come in to our system. And then, on
5 top of that we do have California production up in
6 our San Joaquin Valley area, and on our coast
7 area, not to the degree of our major out of state
8 supplies.

9 Along the way you see where our major
10 compressor stations are located. Along the way in
11 towards the LA Basin area.

12 And then our storage fields are located,
13 one major storage field in our LA Basin area,
14 another one just outside our LA Basin area, one up
15 on our coast, and one down inside the center of
16 the LA Basin in the Playa Del Rey area.

17 So this is kind of a layout of our
18 system. And then of course what we're looking at
19 is the new LNG supply points, as David had
20 mentioned, we've got up on the coast, Oxnard area,
21 down in the Long Beach area, down in our border
22 with Mexico, Otay Mesa area, and then we also show
23 that LNG could potentially come in through a
24 series of pipelines back in through our Blythe
25 system on in to our desert system.

1 And when we look at our system we look
2 at it as different parts of the system. We have
3 our Imperial Valley load center out off our desert
4 system.

5 We've got our San Diego Gas and Electric
6 system, going down to San Diego County.

7 We've got our LA Basin area where,
8 probably I'll say roughly 60 percent of our load
9 is in the LA Basin area.

10 We've got our San Joaquin Valley system,
11 and then we've got our coast system.

12 So when we look at operating our system
13 we do look at it as a total system, but we also
14 look at it as having to operate our system in
15 order to manage these different load centers.

16 Next slide. This is just a quick
17 summary of our supply receipt points. The large
18 number at the bottom is what we call our firm
19 capacity. And we break it out by different
20 systems.

21 The south desert system, or the Blythe
22 system. The north desert system. The San Joaquin
23 Valley high pressure system. The San Joaquin
24 Valley low pressure system. And then the coast
25 system.

1 You'll see that the sum of the
2 individual receipt points is far greater than our
3 total firm capacity, but some of this is done by
4 system.

5 Our storage fields, I mentioned we have
6 a total of 122 billion available capacity at our
7 storage fields, with approximately 850 million
8 injection capability, and up to 3.1 billion
9 withdrawal capability.

10 A little bit on our planning criteria
11 and system demand. We plan, design our system
12 around a one in 35 year cold date for the core
13 load, and a one in ten year cold date for the firm
14 non-core load.

15 Our system demand ranges from about 1.9
16 billion, that would be a summer-type low, on up to
17 a five billion plus winter load. And our system
18 is actually designed, counting flow and supplies
19 and storage withdrawal, for a 6 billion peak
20 winter date load. But this would be kind of a
21 range that we have experienced.

22 This will show you a typical winter
23 hourly send-out pattern. Basically driven by core
24 load in the winter.

25 And then slide 8, showing a typical

1 hourly send-out for a summer type demand, which is
2 driven by non-core load, primarily EG burn. This
3 is kind of a mild profile, it certainly peaks on a
4 very high EG day, it can peak far greater than is
5 shown on this slide here. But these represent
6 what we have to manage in operating our pipeline
7 system.

8 A little bit on the operations. We
9 start off with a demand forecast, and we've got to
10 consider any facility shutdowns we're having, but
11 we start off with a demand forecast, and that
12 leads us to committing to a daily takeaway
13 capacity on our system from our supply points.

14 That would be the day before the gas
15 day. The gas day starts at 7:00 a.m. the next
16 day, we commit to this the day before the gas day.
17 And that starts our gas scheduling cycle.

18 Basically, what we have available for
19 takeaway capacity on our system is our demand
20 forecast plus any available injection into our
21 storage fields, for any given day, and that kind
22 of leads us to our takeaway capacity.

23 I mentioned our gas schedule cycle, it's
24 a two day cycle. We have two cycles, the day
25 before the gas day, and two cycles the day of the

1 gas day.

2 And this comes into play a lot in how we
3 operate the system and how we have to manage the
4 system, depending on what's going on during the
5 gas scheduling cycles.

6 When I talk about managing the system,
7 of course we have to forecast our demand, the
8 actual gas day, and now we're having to actually
9 manage the demand, not just for the total day, but
10 we look at hourly profiles of the load throughout
11 the day that you saw on the previous slides.

12 Very important for managing the system.
13 We're managing the flow and supplies, storage
14 withdrawal and injection, and then the inventory
15 in the pipeline itself, the pack or draft of the
16 pipeline system; and then safety reliability,
17 efficiency, and operating within parameters of the
18 system.

19 Just a quick slide that's been seen in
20 previous proceedings or workshops. We talked
21 about the supply points back on slide 3 I believe
22 it was, the system map, this just a quick slide
23 here that talks about the fact that those supply
24 points require facilities to be built in order to
25 move gas throughout our natural gas

1 infrastructure.

2 So this slide talks about some
3 assumptions about the supply points. Otay Mesa,
4 Long Beach, and Oxnard. It assumes that the
5 supplies are not incremental to existing supplies,
6 that they displace existing supplies, and that if
7 you were to have more than one of these projects
8 go into play the cost would be substantially more
9 than any one individual project.

10 But basically up on the coast, the
11 Oxnard area, we would have to add piping to get
12 the gas over towards the main part of our system.
13 In the LA Basin, the Long Beach project would
14 require a certain amount of facilities to be built
15 in the LA Basin area to move the gas out of the
16 Long Beach area.

17 And then in the Otay Mesa area, you're
18 basically down at the bottom part of the system,
19 so you'd be looking at having them build the
20 pipeline to move gas back up out of the San Diego
21 system and back up to where you could get the gas
22 moving towards the LA Basin.

23 And I mentioned back on slide 3 that our
24 system was built to move gas towards LA Basin. As
25 a result of that, we do not have the same pressure

1 of all these pipelines throughout the system. And
2 that's why you bring gas in on this end, it's a
3 lot different than bringing supplies in at the
4 perimeter of the system, where our pressures, our
5 pipelines were designed with a higher operating
6 pressures in order to move gas towards the LA
7 Basin.

8 Supplies in the LA Basin are now coming
9 in at the lowest pressure in our system, and to
10 move the gas anywhere in our system just requires
11 some facilities to be built to move it around the
12 system.

13 Up in the Oxnard area we do have a
14 couple of EG plants, and of course we have a
15 storage field up in the Goleta area, so that
16 supply, the location of these new supplies coming
17 in have a lot to do with how we would operate the
18 system also.

19 It's location, quantity of gas, and then
20 timing. Gas moves like a snail relative to
21 electricity of course, and so if you look at gas
22 moving maybe 20 miles an hour in the system, that
23 can give you an idea about what it means for
24 supply to be coming in at the Colorado River
25 versus supply to be coming in closer to our load

1 centers, where it doesn't have to move as far and
2 it's right there where the load centers are.

3 Dave Taylor, tomorrow afternoon, will
4 talk a bit more about what happens if these
5 supplies get -- I'll call it, what's the
6 terminology that's on the agenda? -- interrupted,
7 interrupted, interrupted supplies. And what the
8 impact would be on our system in that case.

9 So just a quick summary of our system.
10 The infrastructure in place. And again, the
11 summary is, it is an integrated system of storage,
12 pipeline, and flowing supplies. And there is a
13 lot of flexibility in the system but we do have
14 these load centers that are located in certain
15 parts of the system, where you can't, for example,
16 necessarily take withdrawal from some of the
17 fields and get it to other parts of the system.

18 So it is limited by where the supplies
19 are coming in, where the storage is at, where the
20 pipeline capacity is at. But, as a whole, there
21 is a lot of flexibility in the integrated
22 pipeline system. Thanks.

23 COMMISSIONER DESMOND: I had one
24 question. On the chart that you showed about new
25 supply access costs, it reads non-incremental. Am

1 I to assume that's a step function then at each of
2 those increasing volumes of million cubic feet per
3 day, you're talking about the same amount of
4 incremental investment to handle that range, and
5 then it steps up? Or --?

6 MR. DAGG: I'm trying to remember the
7 detail. It's not exactly a step function. As you
8 hit different, but -- yes, as you hit different
9 capacities, that's what drives different
10 facilities being installed.

11 If that's --.

12 COMMISSIONER DESMOND: As I look at
13 this, I just want to make sure I'm reading it
14 correctly, and it does not suggest that, to go
15 from, pick Otay Mesa, to go from between 700 and
16 900 it's not an incremental \$150 million for each
17 one?

18 MR. DAGG: Oh, no, no --

19 COMMISSIONER DESMOND: Okay, so the bar,
20 so if it were a line it would, might more, really
21 represent? Okay.

22 MR. MORRIS: If you could go back to
23 that incremental cost structure? For Oxnard,
24 there are two offshore projects that are right now
25 being proposed, that would come into Oxnard. Do

1 you have any projections on what if both projects
2 were to come in, would it be on that chart, or
3 if -- if there's more capacity brought in, what
4 would that do?

5 MR. DAGG: I can't say for sure, I
6 believe I've seen where -- this is for one project
7 coming in. it would at minimum be the sum of two
8 coming in, and of course as you compound the
9 volumes coming in it might be even incrementally
10 greater than the sum of two individual projects
11 coming on board.

12 But this is only looking at a project
13 coming in, just a particular volume. So, as you
14 go on, as you see Otag, it's only going up to a
15 billion.

16 Okay? If you were to have two projects
17 that totalled well over a billion, or -- so,
18 basically, what happens is you see the big step
19 function after 1.1, where you now have a pretty
20 substantial investment in order to accommodate the
21 greater volumes.

22 MR. MORRIS: Can I ask one other
23 question. When you talk about integrated system
24 you have right now, could you comment on what, in
25 the interest of flexibility, LNG could bring to

1 the system? And what disadvantages in terms of
2 flexibility to the system?

3 MR. DAGG: Well, certainly more supply
4 sources is an advantage, I would see that as an
5 advantage from the customer point of view. I know
6 David will be talking tomorrow about what happens
7 on upsets or interruptions to supply.

8 The only point I'll make is, when the
9 supply is riding the load center you're banking on
10 that supply right there. If you were to get a
11 complete interruption to a supply that's in a load
12 center you'd have far greater impact on the system
13 than a complete interruption of a supply that's,
14 let's say, out at the Colorado River.

15 But that would be complete interruption
16 of supply. Bottom line, when a supply is right at
17 the load center you're banking on that on an
18 hourly basis to meet that demand. If the supply's
19 coming in at the Colorado River you're not banking
20 on that hourly at the load center.

21 Through displacement on the system
22 you've got other supplies that are already planned
23 for the load center. So the only difference is,
24 when the supply is right at the load center and it
25 were to be interrupted, you'd have to do a lot

1 more on the system in order to make up for that on
2 a timing basis.

3 Now if it's planned interruptions, which
4 David will talk about tomorrow, it's a lot
5 different if it's planned on a schedule and a
6 cycle, so that you can incorporate that into your
7 planning for your gas day.

8 But the advantages, I'd say more supply
9 always seems to be a, you know, an advantage from
10 a customer point of view, certainly. I'm sure our
11 regulatory folks could speak better to that.

12 MR. MAUL: Okay. John, thank you very
13 much. And, before our next speaker starts, just a
14 quick note on the webcast. We do have an initial
15 glitch on the webcast but it has been solved, so
16 hopefully folks are out there in the electronic
17 land and can hear all of us now.

18 Our next speaker is Henry Morse, who is
19 the manager of the North Baja Pipeline Project for
20 TransCanada. It used to be a separate project,
21 but now TransCanada has bought the project, so
22 there's TransCanada to the north and TransCanada
23 to the south. so you can look at a thoroughly
24 integrated system and how it operates.

25 Henry, we appreciate your coming on down

1 to California and telling us about your project.

2 MR. MORSE: My pleasure. Chairman
3 Desmond, Commissioner Boyd, David, thank you very
4 much for inviting me.

5 I'm here today representing the North
6 Baja project. I also do work on gas transmission
7 northwest, which is the major pipeline system that
8 brings Canadian gas to California. But, as I say,
9 I'm here today to speak about North Baja.

10 And I want to provide a little purpose
11 to this workshop that is primarily focused on
12 offshore terminals. I want to address this
13 particular pipeline that will provide an
14 opportunity for gas received at onshore or
15 offshore terminals in Baja California to get to
16 consumers in California.

17 Let's start with a map. You've seen
18 most of this on an earlier map. To understand
19 where the physical facilities are, the North Baja
20 pipeline system, as I will refer to it, starts in
21 Ehrenberg on the Arizona side of the border,
22 crosses underneath the Colorado River south of
23 Blythe, heads south where it enters into Mexico,
24 and then it heads west, south of the town of
25 Mexicali, and it provides a service to two major

1 power plant facilities that are west of Mexicali.

2 And it continues over and it
3 interconnects with the pipeline that pre-existed
4 this system, called TGN, which takes gas from Otay
5 Mesa down to a CFE, a Mexican Federal Electric
6 Utility, a major power plant at Rosarito.

7 Prior to the North Baja system, a
8 portion of the load at this power plant was
9 actually served by gas that went through Southern
10 California Gas Company, San Diego Gas and
11 Electric, and down through TGN to that facility.

12 In part, North Baja was built because of
13 the growing load in San Diego, which was starting
14 to constrain the pipeline system through San
15 Diego.

16 The major loads on the North Baja
17 pipeline system are these three power plants.
18 They constitute 98 percent of the load, and on a
19 peak day they represent about 400 million cubic
20 feet a day of gas consumption.

21 On a typical day it's more on the order
22 of 200 to 250 million cubic feet a day.

23 This pipeline, a little history, was
24 originally permitted in Mexico and the US, in 2000
25 and 2001, and constructed in 2001-2002. It was

1 placed in service in September of 2002.

2 The US portion of the line is owned by a
3 subsidiary of TransCanada. The Mexican portion of
4 the line is owned by a subsidiary of Semptra. Now,
5 there are no cross ownerships between the two
6 pipelines, but the North Baja pipeline and
7 Gasoducto Bajanorte, which is the Mexican
8 pipeline, have had a cooperative agreement with
9 regard to development, marketing, and operation of
10 the pipeline since the concept first came into
11 being in 2000.

12 The pipeline was originally set up to
13 flow gas from the El Paso pipeline in Arizona to
14 locations in Southern California and Baja
15 California. It was not designed with the idea of
16 LNG in mind. It came about and started the
17 permitting process before LNG became something
18 that people were thinking about being delivered to
19 the west coast.

20 All of the compression in the pipeline
21 is located in Arizona, and the pipeline is
22 essentially a 30 inch pipeline. There's a small
23 stretch of 36 inch pipe. And similar to the
24 Southern California Gas Company system, the
25 pipeline operates at different pressures depending

1 on where you are in the pipeline system.

2 The US portion of the pipeline is rated
3 to operate at 1,150 PSI, the Mexican portion is
4 rated to operate at 940 PSI, and the TGN portion
5 is designed to operate at 720 PSI.

6 Let's go back to the LNG history
7 associated with the pipeline. In 2003 there were
8 five public and two non-public, that we were aware
9 of, there may have been others, proposals to build
10 LNG terminals at the end of Baja California for
11 the purpose of providing natural gas to customers
12 in Mexico with any excess then to flow into the
13 United States.

14 North Baja and Gasoducto Bajanorte ran
15 an open season in 2003 to determine which of those
16 projects were sufficiently interested, which were
17 solid enough that they were prepared to enter into
18 contractual relationship arrangements, to ship gas
19 on both the GB and NBP system.

20 Two shippers ultimately stepped up, and
21 those two shippers turned out to be the shippers
22 that will be utilizing the separate terminal which
23 is currently under construction in Baja
24 California. They executed contracts with us.

25 As a result of those contracts, when

1 those contracts go into effect and LNG starts to
2 be delivered at the Semptra terminal, the direction
3 of flow at the North Baja pipeline will change.
4 Instead of being east to west it will go from west
5 to east.

6 And based on the current contracts,
7 North Baja by itself may be importing as much as
8 900 million cubic feet a day on a peak day, in
9 terms of gas flows into the US, from Mexico to
10 California.

11 This gas will be delivered to either
12 Southern California Gas Company at Blythe, or to
13 El Paso Natural Gas Company at Ehrenberg.

14 Permitting for the pipeline
15 modifications that are necessary to accomplish
16 this change of direction has already been
17 initiated, both in Mexico and the US. And we
18 anticipate having all of the necessary permits in
19 place and facilities constructed by the fourth
20 quarter of 2007, which is the current target date
21 for when that terminal will go into its testing
22 phase and need the ability to discharge gas to
23 test the operation of its vaporizers.

24 Stepping back to the map, the facilities
25 necessary to provide that service are really

1 pretty small. A new pipeline will be built from
2 the terminal up to connect to the GB system, a
3 compressor station will be built in Mexico over in
4 this area.

5 In the United States, the facilities
6 that will be necessary, at levels up to about 800
7 million cubic feet a day, are just piping within
8 our meter station to allow for change in direction
9 of flow, and a piping change inside our compressor
10 station to allow the compressors to operate to
11 push gas into either the Southern California or
12 the El Paso system, and a direct connection --
13 which does not currently exist -- between the
14 North Baja pipeline and our friends at Southern
15 California Gas.

16 Future expansions. Even though there is
17 one terminal under construction there are still,
18 as David's early slide pointed out, there are two
19 other players who are still actively engaged in
20 the development of LNG terminals in that area --
21 Chevron Texaco with an offshore, and an operation
22 called TAMMSA, which is the same as Moss Maritime,
23 another offshore terminal.

24 And there may be others out there. As a
25 result of that, North Baja, Gasoducto Bajanorte

1 and TGN are running a second open season as we
2 speak -- and that open season will conclude on
3 Wednesday of next week -- to determine if there
4 are other shippers who are prepared to enter into
5 contractual commitments, if we require further
6 additions to the pipeline system, to move their
7 gas into California.

8 All of the original shippers the first
9 open season for LNG, have already entered into
10 contracts with each of those three major loads, in
11 Mexico to drop off a portion of the gas they
12 expect to bring into that terminal at those
13 customers in Mexico.

14 So any additional supplies that come in
15 will, except for load growth in Mexico over time,
16 any additional supplies will wind up coming in to
17 the US.

18 We will enter into agreement after the
19 open season concludes and we determine the level
20 of interest and enter into negotiations. We will
21 make the necessary steps to get permitted the
22 facilities to serve those terminals, which are
23 expected to go into service in 2008 or later.

24 Going back to the pipes, at that time,
25 with incremental supplies above what we've already

1 entered into contracts with, we will need to
2 construct on the two systems looping of the
3 existing pipeline. Additional supplies cannot be
4 accommodated with just additional compression.

5 Looping is just putting another pipeline
6 in, 20 feet offset from the existing one, in the
7 existing right of way. One could liken it to
8 putting another lane on a freeway to increase the
9 capacity of the freeway.

10 Those pipes would operate most likely at
11 the same pressure as the original pipes, and
12 they'd be integrated, as an integrated system.

13 In the United States we expect that we
14 will do that entirely in an existing right of way
15 so that any environmental impact necessary that
16 would accompany the addition of those facilities
17 is in a corridor that has already been impacted.
18 There's no need for any incremental environmental
19 impact to provide that additional capacity to get
20 up to the Blythe/Ehrenberg area.

21 Another option that's been talked about
22 is an additional pipeline from Otay Mesa up to the
23 Southern California Gas Company system at the San
24 Diego/Riverside County border. That pipeline, as
25 I understand it, would need to be a brand new

1 pipeline that goes through relatively highly
2 populated areas with not insignificant
3 environmental impacts.

4 Turning to a little bit about the
5 subject that's to be addressed tomorrow, which is
6 security concerns, I just want to point out that
7 because the existing shippers on the North Baja
8 system have already contracted to supply gas to
9 facilities in Mexico, and it's the excess gas from
10 those facilities that would be imparted into the
11 US, combined with the fact that the Mexican
12 pipeline system only connects the US pipeline, and
13 the closest Mexican pipeline is about 1,000 miles
14 away, over in Texas, that the potential for gas --
15 if the relations between the United States and
16 Mexico reached an awkward point -- the potential
17 for gas to be hoarded in Mexico really doesn't
18 exist.

19 There's no place, there's no storage
20 there to put the gas in. The only way that gas
21 can stop coming is if it stopped being delivered
22 to the LNG facilities itself, and if that were to
23 happen then gas would not be available to provide
24 service to the Mexican facilities that are
25 necessary to serve the population of Baja California.

1 So, as compared to other situations,
2 where a disruption could occur that could cause
3 gas to be stopped at the border, physically the
4 conditions that would allow that to occur in this
5 pipeline system do not exist.

6 I'd like to conclude on the note that
7 North Baja is a pipeline already in service, we've
8 already ran an open season and signed shippers for
9 the first LNG terminal, what will probably be the
10 first LNG that will be delivered on the west coast
11 of North America.

12 A significant part of that LNG will be
13 delivered into California, on the Baja system.
14 Some of it may be delivered into California via
15 Otay Mesa into San Diego Gas and Electric,
16 depending on how ceratin regulatory proceedings
17 before the California PUC play out.

18 And we are working with additional
19 developers to provide additional capacity to get
20 that additional gas into California as well. Be
21 happy to take any questions.

22 MR. MAUL: Thank you, Henry. Questions?

23 COMMISSIONER BOYD: I don't know if this
24 is a question or a statement or a factoid or
25 something, but one of the things this agency hears

1 in other forums that it conducts, such as our
2 border energy forums,, and in other arenas or
3 forums that we appear, is the controversy or the
4 question about the future demand or need for gas
5 in Mexico, which really means Baja.

6 Which, as you've indicated, Baja is
7 highly isolated from the rest of Mexico. And as
8 you've indicated here, other than those three
9 power plants there doesn't appear to be any other
10 demand in Mexico coming in to existence. And thus
11 that gets kind of controversial with people who
12 are opposed to the projects down there, as to Baja
13 just being a doormat for the United States and
14 California.

15 Are you aware of any other potential
16 demand in the future? I know this agency, and
17 other forums, have tried to work on border energy
18 issues to facilitate the Maquilladores and what
19 have you, but there seems to be little to no gas
20 distribution pipeline system in Baja to received
21 any of this gas, nor any real interest in
22 developing that gas pipeline.

23 Perhaps the bottled gas people down
24 there have it bottled up pretty well. But do you
25 have any views on that situation?

1 MR. MORSE: I do. There is a very small
2 amount, but a growing industrial load in Tijuana
3 and the Tecate area. Today it's less than five
4 million cubic feet per day of demand. So it's
5 pretty tiny.

6 Will it grow? I suspect it will, with
7 the availability of natural gas. Would it grow
8 whether there's an LNG terminal or not? I think
9 it was going to grow because of the gas that's now
10 available that had never been available there
11 before.

12 Similarly, the population in this area,
13 forget California, the population in this area
14 continues to grow, and I believe CFE projects that
15 their demand to meet their domestic electric
16 requirement in the area is drawing on the order of
17 six to eight percent per year.

18 So there's no doubt that there will be
19 the need for additional power plants to serve
20 Mexican load, probably served by this gas.

21 Yet, in the scheme of things, given that
22 the peak demand today of these major power plants
23 is 400 a day, even if that were to grow 10 percent
24 a year, that's 40 a day, for years and years,
25 okay, that's a lot.

1 But we're talking about a plant here
2 that's scheduled to bring in on average one
3 billion cubic feet of gas a day. And plants, the
4 two plants that are expandable -- so one and a
5 half or two billion cubic feet per day -- and
6 plants offshore here that are talking initially
7 about 700 million cubic feet a day expandable to
8 1.4, and the TAMMSA project at about 450 million
9 cubic feet a day expandable.

10 There's not doubt that the load in
11 Mexico will probably continue to grow, but even if
12 it grows at a huge rate most of the gas that comes
13 in here will ultimately find it's way to
14 California.

15 And power plants will grow in this area
16 for no other reason than to serve the local
17 Mexican electricity demand. Whether or not
18 additional power plants are built that can provide
19 service to California, which has been a point of
20 significant contention, is in large function, I
21 suspect, a matter of what happens to the electric
22 transmission network down here, and whether or not
23 that power can actually be brought in and
24 transmitted to load centers in California. And
25 that's --

1 COMMISSIONER BOYD: And there has been
2 and continues to be an air quality issue along
3 with the other --

4 MR. MORSE: There's no doubt that
5 there's an air quality issue here associated with
6 that, and an air quality issue here that has
7 improved, because this power plant, about half of
8 the load there used to burn what was known as
9 "combustileo", or something like that, very high
10 sulfur content residual fuel oil.

11 So the provision of natural gas here,
12 without the potential of interruption as load
13 growth here, has helped clean up the air along the
14 coast. These power plants, to the extent that
15 they are not fully controlled and don't have 100
16 percent offset, have contributed more politically
17 I believe than physically to the air quality issue
18 in the Imperial County area.

19 But they certainly have contributed.
20 And there's no doubt that it's an issue, it's an
21 issue that we faced in the permitting of this
22 pipeline initially, that we were creating the
23 opportunity for that.

24 The alternative, if there's not gas, to
25 serve the Mexican load, is to build power plants

1 that run on diesel, and that's a whole lot worse
2 than power plants that run on natural gas.

3 MR. MORRIS: I have a question. When
4 you said that, in Blythe/Ehrenberg gas can go into
5 Southern California system or El Paso system,
6 obviously El Paso could go eastward to Arizona.
7 Are you also considering Line 1903 to go up to
8 northern California? Is that something
9 operationally that you're considering?

10 MR. MORSE: Certainly we will be able to
11 provide gas to El Paso that they can put into Line
12 1903 if they choose to modify that line so that it
13 can flow from south to north. That's the decision
14 that needs to be made by El Paso, not by us.

15 But we'll be capable, in our yard there
16 in Ehrenberg, to put gas literally into El Paso
17 system, where it could, if somebody wanted to,
18 quickly go around the horn and into the SoCal
19 system, by existing facilities; go directly into
20 the SoCal system by an interconnect which we are
21 in the process of getting permitted; or going into
22 Line 1903, if El Paso configures that line such
23 that it can flow gas from south to north and
24 deliver into the PG&E system.

25 That's not the way it's currently

1 projected to be configured, but that's certainly
2 something El Paso could do.

3 MR. MORRIS: One other question. Since
4 you're with TransCanada, if the LNG projects in
5 Oregon or British Columbia are built, will there
6 be availability through the pipeline from
7 TransCanada to Malin for the gas to be transported
8 to California?

9 MR. MORSE: It would take an expansion
10 of that pipeline, or some of the existing shippers
11 who's contracts terminate over the next couple of
12 years if they chose not to renew, there might be a
13 limited amount of pipeline capacity available.
14 But that is, you know, that pipeline is not
15 completely full but it's pretty close to full.

16 And in comparison to a billion cubic
17 foot a day terminal along the Oregon coast
18 somewhere, there's not a billion cubic feet of
19 spare capacity contractually on the pipeline. So
20 it would take an expansion of the gas transmission
21 northwest pipeline.

22 And similarly, presumable, an expansion
23 of the PG&E system, depending on what happens with
24 contracts on the Redwood Tap on the PG&E system.

25 MR. MAUL: Okay. Henry, John, thanks

1 for your presentation, and we appreciate your
2 coming out here and letting us know what your
3 systems are like.

4 Our next speaker is Jim Jensen. And
5 while we're doing a computer changeout to
6 accommodate Jim let me just note that Resources
7 Secretary Mike Chrisman had joined us earlier.
8 Unfortunately he missed the absolutely sterling
9 presentation by myself, but he did catch the very
10 informative ones by John Dagg and Henry Morse.

11 So Mike, thank you very much for joining
12 us. Did you wish to make any comments today?
13 Okay, good, thank you very much.

14 All right, we're going to do a quick
15 computer changeout here, because Jim, I
16 understand, has a proprietary electronic
17 presentation style. So Jim, we appreciate it very
18 much you coming out here to California, it's been
19 a long trip for you, and we know you've been
20 travelling quite a bit nationally and
21 internationally, and we always appreciate your
22 advice, insights and knowledge for California.

23 MR. JENSEN: I'm honored to be here
24 today. I need to make a comment. Those of you
25 who are trying to follow it on the web, my

1 presentation is not on the web. What you'll see
2 this morning is what I call the short form
3 presentation, for speaking. I like a long form
4 presentation that's more stand alone. That's not
5 quite ready yet, but it will be available next
6 week and you can download it at that point.

7 Okay. Well, let's talk about global LNG
8 markets, and particularly the Pacific Basin.

9 It's really been 47 years since the
10 Methane Pioneer made its maiden voyage from Lake
11 Charles, Louisiana to Canvey Island in the UK and
12 kicked off the LNG business.

13 And initially there was a lot of
14 enthusiasm and excitement, both in Europe and the
15 United States. But very quickly the European
16 demand slowed, the North American market
17 essentially collapsed, and for most of the period
18 of time since that time LNG has been a regional
19 fuel essentially dedicated to Japan, Korea and
20 Taiwan.

21 Now the Atlantic Basin has come back.
22 Both Europe and the United States are very
23 interested in LNG. There are Atlantic Basin
24 suppliers suddenly beginning to develop, and the
25 Middle East that sort of for a long time was out

1 of the game or not very important in the game, is
2 back in a big way.

3 LNG is no longer a regional fuel, it's a
4 global fuel. Here is simply a pattern of the
5 growth of LNG imports by market region.
6 Incidentally, this graph is in BCM, which is a
7 European unit. It was pulled from a presentation
8 I made at the IAA in Paris the week before last,
9 and I haven't been able to convert it back to US
10 units.

11 But if you mentally divide BCM by ten,
12 in other words ten BCM is a billion feet per day,
13 then you've got it about right.

14 But as you can see here, the pattern is
15 very dominately a Pacific market business. If you
16 look at the sources of supply, the Pacific
17 supplies also were the dominant sources of supply,
18 but you can see the rapid emergence of the
19 Atlantic Basin and the Middle East supplies that
20 are beginning to become important as well.

21 And probably nothing shows it more
22 dramatically than looking at what has happened in
23 the Middle East. Here is the Middle East pattern.
24 As you can see, it began to take off explosively
25 in the late 1990's, particularly with the growth

1 in Qatar, and mostly original contracts that were
2 dedicated to the Pacific Basin.

3 But interestingly enough, if you look at
4 the forward contracts out to the year 2010,
5 they've shifted almost entirely from Pacific to
6 Atlantic Basin -- Europe 37 percent, US 26
7 percent, Asia 17 percent only, something, emerging
8 flexible that I'll talk about which can go
9 anywhere, but most of the flexible stuff comes
10 from the Atlantic, so essentially the Middle East
11 turns it's attention from the east to the west.

12 In this new environment LNG has taken on
13 some of the characteristics of competitive
14 commodity markets. There is a small but growing
15 short-term market for LNG, and the long-term
16 contracts that once were very rigid are becoming
17 much more flexible.

18 But it's unlikely that the global LNG
19 market will ever be as flexible as it's two
20 ostensible parents, the liberalized onshore
21 pipeline markets or the world oil market. And
22 I'll explain why that's true.

23 Here shows the pattern of short-term
24 sales, and as you can see they're growing. But
25 still they're only 11.2 percent of total volume.

1 Most of the stuff is still contractually
2 committed.

3 The LNG project is a chain of capital
4 investments, and it's important to recognize that
5 in that chain, from the development of gas at the
6 wellhead through liquefaction through tankers to
7 receipt and re-gasification, the receipt terminal
8 is only about 15 percent of the capital
9 expenditures.

10 What we're talking about today is the
11 tail of the dog. The dog is upstream, the big
12 capital expenditures are made upstream.

13 The centerpiece of the business,
14 traditionally, has been the sale and purchase
15 agreement, or SPA. The risk-sharing logic of the
16 SPA is that the buyer takes the volume risk, the
17 seller takes the price risk.

18 So long-term contracts had a take or pay
19 contract that said, whether you liked the price
20 clause or not, you took the volume at 90 percent
21 minimum take. And the seller essentially tried to
22 find something that reflected the change in energy
23 markets, and most of it has been oil-linked
24 pricing, which is under a cloud. But that's been
25 essentially the price clause.

1 And that essentially has governed the
2 way contracting has been done. But despite the
3 growth of short-term trading, long-term
4 contracting is likely to remain. There is only,
5 not one LNG train has yet been launched without
6 some sort of anchor of long-term contracting.

7 Interestingly enough, when Shell went
8 forward with Sakhalin One Train One, they gambled
9 with only 50 percent coverage, and the industry
10 was pretty well scared, but in fact that has gone
11 forward and that coverage is now filled up.

12 But fewer buyers can absorb the volume
13 risk that was traditional, a Gas Du France or a
14 Tokyo Electric that signed the original long-term
15 contracts could lay off the volume risks to
16 regulated ratepayers. Those customers are now
17 largely gone.

18 And so the risk is much more the
19 suppliers risk, and what's tended to happen is
20 that the industry has started building the modern
21 equivalent of a filling station.

22 That's essentially to self-contract, to
23 sell to your own marketing affiliate and integrate
24 downstream and reach the retail customers
25 directly. And that has created a certain

1 flexibility of supply that did not exist before.

2 The original contract might have been
3 described as a destination contract, and the
4 contract -- you knew where the source of supply
5 was, you knew the reserve, tankers were dedicated,
6 and you knew where they were going. That's a
7 destination contract.

8 More and more what you're beginning to
9 get is self-contracting, and that might be called
10 essentially system supply contracting. It is much
11 more flexible. And the destinations then are
12 defined by the portfolio of receipt terminals and
13 marketing assets that the companies have.

14 If you look at a company that is self-
15 contracted you sort of see where it's put its
16 positions, its investments, and then you can try
17 to decide where it's going to go.

18 And the destination flexibility really
19 comes in two ways. The system supply that I
20 described, the self-contracting, but also the
21 willingness increasingly for suppliers to take a
22 risk and go with only part coverage, leaving some
23 volume uncovered and available for the flexible
24 market.

25 The new structure of the global LNG

1 trade is substantially different from the
2 restructured pipeline market that we've gotten
3 used to. Obviously we do very short-term physical
4 contract swap markets in the US. The New York
5 Mercantile Exchange and its paper contract trades
6 contracts.

7 LNG trades in cargos. A NYMEX contract
8 is ten million fee. A typical 138,000 cubic meter
9 LNG tanker is 2,850 million feet, nearly 300 times
10 as much gas in that trade in what there would be
11 in a NYMEX contract.

12 And stop trading can be almost
13 instantaneous. When you contract for a cargo you
14 often may have as much as three weeks delay before
15 you reach, before that cargo reaches the market.

16 Also, LNG competition is among a limited
17 number of projects. What I like to call project
18 supply. Rather than among a large number of
19 competing producers, a commodity supply.

20 There's a sharp difference in
21 transaction activity between conventional gas and
22 LNG projects. Over the past decade between 8,300
23 and 22,000 gas wells have been completed in the
24 United States each year. Internationally there
25 have been between zero and six new LNG trains

1 completed each year.

2 And this simply shows you the pattern of
3 gas well completions, and the line at the top
4 showing the number of new LNG trains that have
5 essentially been launched.

6 The open access decision for LNG
7 terminals is a decision with a foot in both the
8 commodity supply and the project supply camps.
9 Looking downstream at LNG terminals is just
10 another part of the transportation system.
11 Looking upstream the LNG terminal is a small link
12 in the investment chain, perhaps 15 percent of the
13 cap, and it faces a limited number of project
14 offerings, not offerings from a large number of
15 producers.

16 In Europe the EU policy has been to look
17 downstream, treating LNG terminals as
18 transportation, requiring third party access. The
19 UK, in exempting the South Hook project of Exxon
20 Mobile, chose to look upstream, treating the
21 project as a production facility, and that's also
22 the approach that FERC has taken in Hackberry.

23 It's very interesting that the most
24 competitive market in Europe is Spain, which has
25 the most aggressive access policies of the lot.

1 But very soon the UK is going to become a brutally
2 competitive market, and it has the most regressive
3 open access policies. So essentially it is not
4 necessarily indicative which way it works.

5 In the new world of system contracting,
6 as distinct from destination contracting, the
7 flexibility arbitrage among different destinations
8 as market conditions dictate is a major objective.
9 It translates price signals around the world.

10 It requires some surplus capacity in the
11 system if the supplier is to re-direct cargos to
12 the appropriate market. Extra capacity is not
13 costless, but it's cheaper to maintain surplus
14 capacity in terminals than in either tankers or in
15 liquefaction.

16 LNG's growth is now accelerating, but
17 the trade report, press reports, are always too
18 optimistic. And so it's really necessary to come
19 up with a judgmental schedule of what projects you
20 think are going to go forward, and when you think
21 they're going to go forward, and I'm going to show
22 you my category broken down by firm, probable, and
23 possible rankings. There's a remote or pie-in-
24 the-sky category that's not there.

25 And as you can see, here's a history

1 going over the past decade and going forward to
2 2012 of the firm, probable and possible for the
3 Atlantic Basin, the Pacific Basin, and for the
4 Middle East.

5 And if you look back in the period of
6 time, the early period of time, it was 4.2 million
7 tons per year. That's equivalent to about one
8 current train.

9 It then moved up to about 7.9 million
10 tons per year, and the firm projects are really up
11 to about 9 millions, the probables are 14.8, and
12 if you add in the possibles you're up to 31.3.

13 Now, in my view, if you start getting
14 close to the upper end of the scale what you're
15 going to get is demand pull inflation and cost
16 increases, because they are not the designed
17 constructors, the shipyards, and the people that
18 do the job. And we're already seeing some of that
19 evident.

20 So I think a good forecast is probably
21 somewhat higher than the probables, but not as
22 high as the possibles.

23 The market growth patterns are shifting
24 the regional patterns of trade. The Atlantic
25 Basin is growing the most rapidly, and the

1 Atlantic Basin supplies -- Trinidad, Nigeria,
2 Snowvede (sp) in Norway, Egypt, Algerian
3 expansions -- are coming on rapidly.

4 But they're not keeping up with the
5 growth of the European market, which is creating
6 an opportunity for the Middle East.

7 Pacific Basin supplies are currently
8 tight, but there's a question as to whether they
9 will do that in the long term. I believe there's
10 too much potential Pacific supply chasing too
11 little market growth, and the current tight market
12 is temporary. But obviously it's a difficult
13 thing to judge.

14 The China and the North American west
15 coast are the wild cards in Pacific Rim demand.

16 Here is simply a presentation showing
17 the IEA's estimated regional growth. I've adapted
18 some western hemisphere sources, US and Mexico,
19 because the IEA is too conservative about that.

20 As you can see on the left, showing
21 imports and capacity comparisons, there's more
22 import potential for the Atlantic Basin. If you
23 assume that India belongs in the Mideast sphere of
24 influence there's tremendous surplus in the Middle
25 East, and if you look at the Pacific region you

1 can see that there's surpluses out there as well
2 in the longer term.

3 In the new pattern of global demand
4 growth, the Middle East is most reliant on long-
5 term contracts. And that's understandable because
6 they are at the farthest distance from the market.

7 The Atlantic Basin has become a flexible
8 arbitrage market, and essentially you're
9 arbitraging supplies in Nigeria and Trinidad
10 versus the United States and Spain, so it's an
11 extremely flexible market.

12 The Pacific Basin also has a high
13 proportion of uncommitted system volumes, but they
14 exist for a different reason. The competition for
15 new greenfield projects, people willing to stick
16 their necks out with less than traditional
17 coverage, and there's a big wave of contract
18 exploration coming up, being there's some gas that
19 is not going to be contracted that will be on the
20 market.

21 And here is the pattern for the three
22 regions. The top purple ones show the flexible
23 volumes in each market, the Atlantic, Middle East,
24 and the Pacific Basin. As you can see, the
25 flexible volumes in the Middle East are the least.

1 And I'll show three figures showing the
2 contract dedication status for North America,
3 Europe, and the Asia Pacific market, and simply
4 allocated the flexible stuff to the various
5 markets based on recent experience.

6 But because of the active arbitrage
7 market there's no guarantee that flexible supplies
8 will actually go to the markets in question.

9 And there is the pattern for the
10 Atlantic, looking at 10 BCM, or one billion cubic
11 feet per day, per year, of increase. A little bit
12 more for Europe, and a little bit less for the
13 Asia Pacific market. And you can see the effect
14 of an Indonesian shutdown that's going to be
15 occurring in there.

16 The supply to the northeast Asian market
17 and the Pacific Basin has become very tight over
18 the past two years. Indonesia is suffering from
19 gas field depletion. It's a roon (sp) field in
20 western Sumatra, arguably the most profitable LNG
21 project the world has ever seen or may ever see is
22 now in advanced stages of depletion.

23 It is in the Ache province, where the
24 rebels hold forth, and essentially it is going to
25 be shut down before the end of the decade.

1 Bontang in east Kalimantan is a
2 different story. There's plenty of gas there, but
3 at the moment Bontang is actually short as well.
4 But there are problems that are political and
5 bureaucratic that ought to be solved that haven't
6 been solved, so Bontang's supplies are less than
7 expected at the moment.

8 And Tokyo Electric had a big nuclear
9 accident late in 2002. Seventeen nuclear plants
10 were shut down, some for nearly two years,
11 upsetting both LNG and oil markets, creating a
12 tight demand situation.

13 And Malaysia's Tega LNG plant had a fire
14 on startup in 2003 which took it off line for six
15 months.

16 Here is simply the pattern over the last
17 three years of northeast Asia imports by the
18 various places, showing Indonesia of course the
19 biggest supplier, and it's slightly going down,
20 and Malaysia picking up some of the slack.

21 And you can see on the right that there
22 were some short-term volumes because of Tokyo's
23 problems, pulled out of Trinidad, pulled out of
24 Nigeria, pulled out of Algeria, that are naturally
25 in the Atlantic Basin market.

1 Despite the current tightness of the
2 Asia Pacific market there are a large number of
3 potential new supplies available to the region.

4 Australia is particularly well situated
5 to bring new projects on line.

6 Indonesia, despite the pending shutdown
7 of Arun, has additional supplies in offset,
8 particularly at Tangguh, that's coming online.

9 And the Middle East could easily turns
10 it's attention once again to the Pacific Basin
11 market if it so chooses.

12 And here are simply a pattern, showing
13 potential capacity available to 2010. I've
14 included my probable or possible projects in
15 there, and so you can see Indonesia the big
16 supplier with the dark blue, but as you can see it
17 has a lot of potential for probable and possible
18 supplies.

19 Australia very large. Malaysia is
20 probably pretty well peaked out for the time.
21 Alaska as well. Sakhalin is coming on, etc. But
22 there is the kind of pattern that I see that is
23 potentially available to the market over the next
24 decade.

25 One of the major uncertainties of the

1 Pacific Basin LNG market is the imminent
2 expiration of the Australian and Indonesian
3 contracts. This has given buyers some incentive
4 to wait and see how the current tight market plays
5 out, it's very tight. But you've got a bunch of
6 contracts coming up for expiration.

7 China was able to extract very favorable
8 contract terms before the tight market
9 uncertainties made the sellers very wary. Now a
10 common perception is that those favorable Chinese
11 terms will not soon be repeated.

12 But the conflict between current market
13 tightness and looming contract expiration will be
14 a significant factor in new contract negotiations
15 for the remainder of the decade.

16 And there is simply a pattern of the
17 contracts going out in time for the Pacific Basin,
18 contract commitments to the Pacific Basin. As you
19 can see, a very rapid increase starting
20 particularly in Indonesia and Australia towards
21 the end of the decade.

22 Major new possible supply sources that
23 are available to Pacific Basin markets. I have
24 tried to break them down to what I call multiple
25 train possibilities. And what I've done is simply

1 said anything that's operating or firm I exclude
2 from this category. These are things that are in
3 my probable or possible category.

4 Australia. Clearly the Gorgon project,
5 particularly if the huge janns (sp) field which
6 is, I guess, being considered as part of the
7 Gorgon project, but it could go several places, is
8 part of it. That's a very large field with
9 multiple train possibilities.

10 Browse, which is written off in Scott
11 Reef, also very large.

12 Bolivia, a lot of gas landlocked, and
13 it's a potential for multiple projects.

14 Sakhalin two has potential for a couple
15 of more projects in the probable and possible
16 category. An interesting sleeper in the category
17 is Sakhalin one, that's the Exxon Mobile project.
18 Exxon Mobile has elected to try to develop a
19 pipeline scheme, and they were unsuccessful in
20 doing it in Japan.

21 I'm skeptical that that will work. They
22 are now intrigued, they have a pipeline outlet to
23 Kabarask (sp) in East Siberia and hope to extend
24 that on to China, but there are a bunch of
25 pipeline schemes competing for the Chinese market,

1 that may not fly.

2 If that project were to turn around, it
3 has as much gas as Sakhalin two, and it could
4 become a big source of LNG as well.

5 Sakhalin three through six are real wild
6 cards. They are not yet in expiration stages.
7 There's been enough work done to indicate there's
8 a tremendous amount of gas there, and how that
9 will develop is hard to know.

10 One of the interesting things that's
11 going on in Russia right now is that Russia really
12 did not (unintelligible) -- which controls almost
13 all the gas going to western Europe. It did not
14 really have a good position in the east, and has
15 been trying to negotiate and maneuver into some
16 control in that, and has now got in a position in
17 Sakhalin two.

18 The Russians are disappointed with their
19 ability to get outlets in western Europe, and
20 therefore have gotten very excited about LNG
21 project, particularly from the Stockman field into
22 the United States.

23 But they do not understand LNG, and
24 having gotten a position in Sakhalin two may be an
25 educational experience for gas pram (sp) to get

1 its feet wet. And what will happen in Sakhalin
2 three through six is a wild card, but there's a
3 lot of gas there.

4 Going down to the single train event
5 possibilities, one of the ones we're talking about
6 today, Pilbara, Scarborough. There's only enough
7 there for one train. I know they talk about space
8 for four trains, they've got to find the gas or
9 divert it from somewhere else for that to happen,
10 but at the moment it's a one train project.

11 The Australian Timor zone of
12 cooperation, the Sunrise field, looked like that
13 wa a sure winner several years back, but it is in
14 this difficult area, a zone of cooperation that
15 was negotiated originally between Indonesia and
16 Australia, and then when East Timor became an
17 independent country it was essentially with East
18 Timor.

19 And East Timor has been around the world
20 trashing the Australian government because they're
21 taking advantage of this poor little developing
22 country. So the Sunrise project has been on the
23 back burner.

24 But it now looks as if Australia and
25 Timor may have negotiated a deal, so Sunrise may

1 be back in play. And Sunrise was clearly, after
2 Tangguh, was going to go forward. Tangguh is a
3 limited size reserve, there are two trains that I
4 think are firm, there's another train that's
5 coming on.

6 Donggi. In the trade press people can't
7 figure out if there's enough gas there or not.
8 I'm skeptical, but it's in the trade press.

9 Bontang, in theory, has additional gas
10 as well. But Bontang's problem is very
11 interesting. Trains A and B, which were the
12 original trains, were based on gas that is in
13 depletion. Totale, which has a lot of the
14 additional gas, looking out in time, to build
15 potential new trains, has talked about new trains.

16 But in fact, if you're short of gas in
17 the early trains the thing to do is to take the
18 surplus reserves and put them into the early
19 trains. That is difficult to do because nobody
20 can figure out how to run the show, and so it
21 hasn't happened.

22 And in the meantime, because there are
23 problems in Indonesia anyway, Indonesia likes to
24 divert gas that's supposed to go to the LNG plants
25 to run fertilizer plants to keep the local people

1 happy, and so Bontang's lost some gas. I don't
2 think that train will happen, but it's there.

3 Brunei talks about an additional train,
4 they've got the gas, whether it will happen I
5 don't know.

6 Peru, the Canasaya (sp) field has enough
7 gas for one train and for the local market, and
8 the trade press says that's probably committed to
9 Lazaro Cardinas and the Mexican west coast, but
10 that's potentially there.

11 The ones that are really sold out, the
12 Alaska-Cook Inlet. If you believe that the Alaska
13 Yukon Pacific project still has life, and there
14 are people in Alaska who do believe that, I don't,
15 then obviously there's a lot of gas up there.

16 And Malaysia is pretty well sold out,
17 but there is some uncommitted supply that's
18 available.

19 Australia and Timor, the Bayu Undan
20 project, is sold out.

21 But there's available stuff in the
22 Middle East. Qatar, of course, still has a lot
23 despite an ambitious program of committing much of
24 it to Europe. And Iran is a big sleeping giant.
25 It's sitting there with a huge amount of gas,

1 wanting output but politically very difficult, and
2 negotiating with China and people like that. So
3 that gas may enter the market at some point, but
4 when we don't know.

5 There is some uncommitted capacity in
6 Oman and Yemen, so there's some supply there as
7 well.

8 The Asia Pacific import demand has
9 increased about four million tons of LNG
10 equivalent over the past decade. Projections
11 based on IEAE, IA, and trade press suggest it
12 might increase to nearly seven million tons a year
13 after 2010. That's slightly more than one typical
14 current LNG train, less than one super train.

15 But this projection also includes
16 pipeline imports, and it's very likely in the case
17 of China. China is sort of trying to decide
18 whether to bring in pipeline gas or LNG and it's
19 very difficult to know.

20 And it's possible in the case of Korea
21 and Japan. I'm skeptical about Japan, but Korea
22 desperately would love to have a pipeline.

23 Increases in the following slide, of US
24 and Mexico demand, are taken as incremental
25 demand, they're not really imports. And here's

1 simply an estimate of how much those forecasts
2 might be going forward in Japan, Korea, China and
3 the US west coast. The US west coast is,
4 obviously the Mexican stuff is added into the
5 forecast but not into the history.

6 The outlook for the Pacific Rim demand.
7 Japan has had a temporary slowdown, but there's a
8 resumption in growth and the expectation is that
9 will continue. The wild card there is they have
10 had some desperately bad problems with nuclear
11 power.

12 Tokyo Electric and Kensai Electric had a
13 problem which wasn't directly nuclear related, but
14 whether that affects their pattern that they've
15 had of using nuclear and coal for baseload and gas
16 for intermediate firing, may change. And that
17 could stimulate demand.

18 Korea has been a very rapid growth
19 market, but there's a big question about the
20 privatization of coal gas, and whether industry
21 gets access to LNG, and that was kind of hanging
22 over the market for awhile. It now appears that
23 Korea is going ahead and contracting without
24 resolving that problem, so it's a continued growth
25 market.

1 China's really the great enigma. It's a
2 society in transition from a command and control
3 economy to a market economy. They've developed
4 that they can build infrastructure with a command
5 hat on. Can anyone in this room picture building
6 a three gorges project in the United states? No.
7 An enormous hydro project displacing villages,
8 everything. They can do that.

9 They have just completed the west/east
10 pipeline, which is a more ambitious pipeline than
11 we ever built in North America. On the other
12 hand, they built a couple of smaller pipelines
13 from the ordo space into Beijing and Tsian awhile
14 back, and it took them a long time to fill those
15 pipelines up, because nobody would buy the stuff
16 once it was available.

17 And so the interesting question is
18 whether that market demand will be there when
19 their infrastructure goes forward. It affects
20 things now at the moment because CMOOC, the oil
21 company that's ambitiously trying to build LNG
22 terminals on the west coast, at the same time as
23 you have this huge pipeline, the west/east
24 pipeline, coming online.

25 Interestingly enough, in Paris two weeks

1 ago -- one of the interesting problems is that gas
2 price out of the west/east pipeline is far higher
3 than coal prices, and so you say now wait a
4 minute, if you have a market economy and you do
5 price signals that say "this is the expensive
6 fuel, but the cheap stuff you shouldn't take",
7 what happens?

8 The IEA is very much impressed with
9 that, and in the world energy outlook they did an
10 analysis of that and it made them very pessimistic
11 about the Chinese demand.

12 But the guy from CNOOC, who is a
13 financial officer, said "well, really basically
14 coal prices are going up in China." And then, I
15 had a chance to chat with him at the end and I
16 talked about pipelines, and I said "well, you
17 know, you guys didn't fill up the Ordos Basin
18 pipelines, how are you going to fill up this
19 stuff?"

20 He says, "well, there's a tremendous
21 unmet demand for power generation. Once we turn
22 the power plants on, they'll go." That may be
23 true, that may not be true, but that's -- he did
24 make one interesting comment, and that is there is
25 no orderly regulation of LNG terminals in China,

1 it's done on an ad hoc basis.

2 Which basically says that the Chinese
3 are feeling their way along. So I guess you pay
4 your money and take your choice, but China could
5 be a big demand. I think it is unwise to make the
6 assumption that people often do, that because the
7 Chinese have entered the world oil market as a
8 massive, 900 pound gorilla that they'll do the
9 same thing in the gas market. It's a totally
10 different business.

11 And California is an interesting market
12 from a suppliers perspective, because it brings
13 into play something which I call basis risk. That
14 is, if you overload any market you discover that
15 you break a pricing structure.

16 And I'll simply show you an interesting
17 case, which is the collapse of the basis
18 differential between the California border and
19 Henry Hub, following the 1994 expansion of pacific
20 gas transmission from Alberta.

21 And as you can see, that really blew the
22 prices out of the water. And that was 450 million
23 a day in a five billion foot a day market.

24 Now obviously, from a consumers point of
25 view, that's a great idea. But from a producers

1 point of view, looking at trying to recover
2 capital, that's a scary feature. And so that says
3 that there are questions and issues in looking
4 into this market.

5 There's an emergence of price arbitrage
6 in global LNG markets. And one of the interesting
7 things, the Atlantic Basin is an interesting one,
8 and I think there's no better way to demonstrate
9 it than to take a look at the performance of the
10 US terminals over the last several years.

11 And I'm simply, because I'm running
12 short of time, I'm going to move right on down
13 here. And this is the comparison of terminal
14 capacity, relative to terminal utilization.

15 And as you can see, following the gas
16 price shock of 2000, if you had a terminal to
17 provide cheap LNG you could make money. Very
18 quickly the US price collapsed, the European price
19 was strong, and in the second year the terminal
20 utilization rate went down to 34 percent capacity
21 factor.

22 When Japan entered the market with the
23 tactical and nuclear upsets that pulled some stuff
24 out. We are at the moment competing with oil
25 linked gas prices in Europe, which are very high.

1 And so essentially that has been causing some
2 problems with the arbitrage.

3 Here are two slides that simply show
4 pricing patterns for the Atlantic Basin,
5 reflecting Trinidad or Nigeria to the US Gulf
6 Coast in Lake Charles, or Trinidad or Nigeria to
7 Spain, those are about equivalent. And as you can
8 see, it fluctuates. There are times when Europe
9 buys, sometimes when it is not.

10 When I was in London two weeks ago the
11 British government had a one day hearing, because
12 they had a late cold snap in Europe, in the UK,
13 and some LNG cargos went to the United States and
14 prices spiked in the UK, and they were sort of
15 saying "who screwed up?", I mean, that was the
16 subject of the hearing.

17 So in this new world of price arbitrage,
18 prices are linked. Here's the -- incidentally,
19 the arbitrage that's taking place in the Pacific
20 Basin is through the Middle East. The Middle East
21 can decide whether to ship east or west, and so
22 that transmits price signals between the two
23 markets.

24 Price arbitrage will be much more
25 difficult in the Pacific Basin than it is in the

1 Atlantic Basin. The distances are much longer.
2 If you're sitting in Australia and all of a sudden
3 the California market looks good, to deliver the
4 same amount of gas that you deliver to Japan
5 requires twice the number of tankers to deliver it
6 to California. And that's going to complicate
7 arbitrage.

8 And also, the arbitrage in the Atlantic
9 Basin has Trinidad on one side of the Atlantic.
10 Nigeria, Algeria and etc. on the other side of the
11 Atlantic, to play both sides against the other.

12 There's really no viable western
13 hemisphere source for the Pacific Basin arbitrage,
14 other than Bolivia, and Bolivia of course is a
15 horrible problem.

16 In Bolivia there is a guy by the name of
17 Abel Morales who is a radical leftist, who has
18 been able to lead street mobs to bring down one
19 president and threaten the current president.

20 Natural gas is a key issue, because to a
21 radical leftist giving the resources that belong
22 to the people to the international companies is a
23 no-no. They didn't bring about re-nationalization
24 of the industry, they got a huge tax increase, and
25 on top of all of that, the idea that they take the

1 LNG plant out to Peru, that took their seacoast
2 away from the middle of the 1800's, is hopeless.

3 So, that's not going to happen. I have
4 one minute? Okay. Here is simply price
5 advantages and disadvantages for the Atlantic
6 Basin and the Pacific Basin, and you can see that
7 absent Bolivian it will be very good if it was
8 there, but it's not.

9 And let me simply talk very quickly
10 about -- one thought that intrigues me is that the
11 Henry Hub based its differentials, which are sort
12 of based on transportation, could be translated to
13 international LNG markets.

14 Qatar is the Henry Hub of international
15 markets. It is not a transparent market, it is
16 not a commodity market. But if you look at
17 transportation distances and differentials going
18 various places it's a very intriguing place.

19 And so, here simply is my illustrative
20 base differentials, assuming that LNG pricing, Hub
21 sets the LNG prices. And unfortunately the US is
22 at the end of the line in both cases. We're
23 farther away from all sources of supply at the
24 moment, except for Trinidad.

25 If you use large tankers you can bring

1 the Gulf Coast differential down on the left. The
2 interesting thing about the Pacific Basin is that
3 it is cheaper to displace Pacific Basin supplies
4 than it is to deliver directly from Qatar, so that
5 pink bar on the right is simply displacement.

6 It simply shows that Sakhalin, which is
7 shipping to Japan, elects to ship to California
8 instead. And some Middle East stuff goes into
9 Japan in place of it.

10 Conclusion. Rapid growth of European
11 and North American markets together with growth in
12 the Atlantic Basin and Middle East supply, LNG is
13 becoming more of a global commodity. Long-term
14 contracts will remain, with the emergence of
15 system contracts and short-term trading will make
16 the old destination contracting much more
17 flexible.

18 Import terminals represent the
19 transition facilities between two different
20 operating models of gas competition -- commodity
21 supply and project supply. Decision to require
22 open access for terminals must weigh the
23 advantages of greater commodity competition
24 against the possible risk to LNG trade investment.

25 Pricing arbitrage in the Atlantic Basin

1 will tend to link North America and European LNG
2 pricing, while Middle East price arbitrage will
3 link Asian and Atlantic Basin pricing.

4 Pacific Basin arbitrage will be
5 complicated by the large distances involved, and
6 by the fact that without Bolivia Pacific Basin
7 lacks a vital western hemisphere arbitrage
8 partner.

9 Qatar may become the Henry Hub of global
10 LNG pricing. And that's it.

11 MR. MAUL: Well, Jim, I think we need a
12 day with you, not just a half hour. You've got a
13 lot of material there, and we're looking forward
14 to getting the written version so we can pore --

15 MR. JENSEN: The long form is much more
16 of a stand alone presentation, and the graphics,
17 so it's a little easier to follow than this,
18 so --.

19 MR. MAUL: Well, you flew through a
20 tremendous amount of material, and I'm sure we
21 have a lot of questions for you, so -- Joe?

22 COMMISSIONER DESMOND: May I echo the
23 same comments. I appreciate the comprehensiveness
24 of the remarks that you've prepared for us today,
25 and we could spend a day delving into each of

1 those subject matters.

2 You made a comment early on about the
3 view of Europe, and in particular Spain, looking
4 downstream and the UK looking upstream in terms of
5 its policies on managed access or access to the
6 LNG terminal.

7 And you followed that by saying that,
8 although Spain now has some of the most
9 competitive prices, the UK is soon to be brutally
10 competitive I think was the term that you used.

11 My question is, could you take a minute
12 maybe to expand on why you think that's the case,
13 given the two different approaches. I don't know,
14 and perhaps you touched on it, but what is it
15 about the UK that now you're expecting a
16 significant change or shift?

17 MR. JENSEN: Well, the thing that's
18 happening in the UK is that there is an increasing
19 demand for natural gas driven by power generation.
20 Everybody is looking at a decline in North Sea
21 availability, so you have essentially a gap
22 opening up between increasing demand and
23 decreasing supply.

24 And, I'm not sure where we stand in
25 balance at the moment, we still may be exporting

1 UK gas to the continent net, but it's now become a
2 seasonal think on the interconnector connecting
3 Belgium with the UK.

4 But very quickly it will turn, with a
5 major import. What's happening is that the
6 Norwegians have a big pipeline project at Ormand
7 Lanhou (sp) which is coming on. You've got three
8 different LNG schemes, the Isle of Green Dragon
9 and South Hook competing for that market.

10 The Dutch in their wisdom, and I don't
11 understand why, have decided they want to build a
12 pipeline from the continent to the UK, and they've
13 decided they don't want it to be reversed to take
14 gas out of the UK to the continent.

15 So everyone's being forced to put gas
16 into this perceived market. So you're getting a
17 tremendous amount of competition, and it has
18 pipeline in its LNG. It really has very little to
19 do with having an open access facility at South
20 Hook.

21 You have competition for that market,
22 and so the market is in good shape, and I'm
23 personally of the belief that we're under
24 contracted in the US, there's not enough stuff
25 being contracted to meet our forecast. I've

1 reversed myself, because I think the British are
2 going to be over contracted, we can have their
3 stuff, you know, that's what's happening.

4 COMMISSIONER DESMOND: Thank you.

5 COMMISSIONER BOYD: I'd hate to pass up
6 the opportunity, with such an expert here, to ask
7 a question that's related to LNG perhaps, but not
8 quite LNG.

9 Another thing we're really interested
10 here in California is the use of natural gas as a
11 transportation fuel. I've always described it as,
12 the demand there is about the size of a pimple on
13 the back side of an elephant, so we don't pay much
14 attention to it.

15 Natural gas is usable as a
16 transportation fuel in three forms -- CNG, LNG,
17 and now gas to liquids, the Fisher Tropsche fuels.
18 Qatar has, there's a huge investment being made in
19 Qatar in GTL, although I'm told this could all go
20 to Europe.

21 But do you see any growth trends in this
22 GTL field? Do you see that it's going to amount
23 to not much more than a penny ripple on the pond,
24 or is it something that -- well, I think I've
25 asked the question.

1 MR. JENSEN: I did a presentation last
2 fall in Abu Dhabi on the comparative economics of
3 transporting gas out of the Middle East by GTL
4 line and GM pipeline. And the interesting thing
5 is, if you look at the various systems,
6 essentially pipeline transportation is very costly
7 over distance. There are very few end effects.

8 LNG, you have to spend a lot of money to
9 liquify, but the transportation is cheaper.

10 For GTL, essentially the thermal
11 efficiency of the process is terrible, and so your
12 end effects are very large, but the cost of
13 transportation is even less than LNG over
14 distance.

15 That argues for putting it in the most
16 remote places with cheap gas you can find, and
17 Qatar fits that bill very well. Also, the product
18 coming out of GTL is not gas, so it's very
19 difficult to compare it in price. It is an
20 extremely high quality diesel fuel.

21 COMMISSIONER BOYD: Right.

22 MR. JENSEN: And it's used for blending,
23 so it's got a premium -- it's a different product.
24 And I believe the two will co-exist and there will
25 be a good market for GTL, but it's not going to

1 replace LNG or really complete with it in that
2 sense.

3 COMMISSIONER BOYD: Thank you.

4 MR. MORRIS: Yes, I have one question.
5 You talked about the expiring contracts in the
6 Pacific in the near future, so there might be
7 supplies that will come available. But you also
8 talked about increased demand in the Pacific.

9 Do you see that those supplies will just
10 be re-contracted for, or will there be some shift
11 in the Pacific to some Atlantic or Middle East
12 supply so that this supply will be available to
13 the United States?

14 MR. JENSEN: Well, I think you basically
15 assume that as long as the reserves are there, and
16 as long as the liquefaction plant is there, it's
17 going to run. So it's not a question of whether
18 the gas is produced on an expiring contract, it's
19 a question of what kind of a contract can it
20 strike and what will be the price.

21 And I think what you're seeing is the
22 buyer sitting around before the current tight
23 market developed, thinking they were in the
24 drivers seat and they could negotiate good deals.
25 And you started to see some contracts being re-

1 negotiated earlier, because the buyers wanted some
2 certainty in the out years and were willing to
3 concede some contract flexibility and even some
4 price considerations for the certainty of being
5 able to renew their contracts.

6 Traditionally, contracts just are rolled
7 over, but now they're sort of in play. But now,
8 with a tight market that has been arrested because
9 the buyers are not sure what their position is.
10 But I think the assumption is that any supply that
11 has enough gas to keep it running, will continue.
12 The only question is one of price.

13 MS. SCHWEBS: I just had a question
14 about the northwest shelf contracts in particular.
15 With the emergence of Sakhalin and potentially
16 with Tangguh in Indonesia, will the cost
17 differential be such that the Japanese and Koreans
18 are more likely to take deliveries from those two
19 new sources, in return for potentially opening up
20 contracts with the northwest shelf?

21 MR. JENSEN: Well, again -- one of the
22 interesting things that was taking place before
23 the Pacific market went tight, I mean, I had
24 mentioned that, in system contracting, the
25 suppliers are wanting to integrate downstream.

1 The interesting thing is, those who have
2 market control downstream now want to integrate
3 upstream. And the Chinese and the Japanese both,
4 in some contracts, negotiated equity positions in
5 the production facilities. So in other words,
6 they were integrating back to the field where --
7 and I always use Conoco Phillips as the great
8 example because they first broke the barrier and
9 they invited Tokyo Electric to buy London, then
10 they turned around and went to Qatar and said "we
11 can sell gas in the United States", and they
12 earned a position in Qatar's north field, so they
13 integrated each way.

14 And that pattern I think will take
15 place. So it's a question of how the contract
16 negotiations develop, and what the relative
17 bargaining positions are of buyer and seller.

18 I mean, I think Australia would like to
19 hold the line on prices with a reliable supplier.
20 Whether they can do that, I mean, in the old days
21 the Japanese loved reliable suppliers, they now
22 regard the market as much more flexible. So
23 whether they would go with that or not I don't
24 know.

25 MR. MAUL: Okay, Jim, we're out of time,

1 but we're glad you're going to be here the next
2 day or so, and we will grab you during lunch time
3 and breaks and talk to you more about this, and
4 folks in the audience, obviously in a public
5 workshop like this, this is an opportunity to grab
6 people and have conversations and network and
7 learn more precisely of what they've just heard in
8 the very few minutes we have you. But we look
9 forward to more conversations like this. Thank
10 you very much.

11 All right. Our next speaker is Dr.
12 Michelle Foss, who is a Director for the Institute
13 of Energy, Law and Enterprise at the University of
14 Houston. We're fortunate that Michelle has been
15 prominent in the LNG area for some time, and on
16 the academic side trying to look at certain
17 issues, and fortunately she's been at it longer
18 than we have, so she hopefully has gained some
19 experience looking at these issues that she can
20 lend to us.

21 We've asked her to come talk to us here
22 about market issues from her perspective in Texas.
23 Looking at US market issues and what lessons we
24 can learn here on the west coast.

25 She also has recently been doing a lot

1 of investigation and research into the possibility
2 of, I guess what in the trade press is commonly
3 called a gas OPEC or a cartel. I'm going to learn
4 the appropriate term from Michelle once she starts
5 talking.

6 We're also fortunate that we're able to
7 catch Michelle between trips. She's actually
8 between Houston and going on to Taiwan I believe.
9 And we've captured her for just 24 hours, and
10 she's flying out again tonight to Taiwan for a
11 major LNG conference.

12 And,, as computers are being swapped
13 back and forth here, hopefully folks on the
14 webcast can still hear all this and download the
15 presentations. Michelle, because we just got it,
16 will be posted later today or tomorrow, so folks
17 on the webcast will not be able to see it right
18 now but will be able to hear her conversation.

19 With that, while we're still waiting,
20 while the computer is being swapped around, any
21 other comments that we can think of real fast --
22 we are going to be taking a lunch break just a
23 little bit after noon today and coming back at
24 1:30. We have a fairly full panel this afternoon,
25 and then a very full panel all day tomorrow.

1 So hopefully we're going to keep your
2 attention the entire time. The more important
3 thing for us is to get all the insight we can from
4 the various folks that have donated their time to
5 come and talk to us.

6 Also, if you're interested in talking
7 during the Public Comment period, again we do have
8 the blue cards that are being handed out in the
9 back there. You can also get them at the sign-in
10 table, fill them out at your convenience, and
11 we'll be calling on the blue cards later today at
12 the end of the closing session.

13 And while we're, still making a computer
14 swap ... just as a reminder, we are taking written
15 comments both after the workshop today up through
16 June 15th. If you'd like to file something in
17 writing, either a presentation, more written
18 comments, or any other material, we'd be happy to
19 review it.

20 And we're having a couple of folks put
21 together a workshop report for us which
22 summarizes all the information we learned out of
23 today and tomorrow. That workshop report will not
24 be providing any major recommendations or
25 conclusions, that's up to our Commission to make

1 those deliberations.

2 But we will be providing a summary of
3 what we've learned today, so folks can download it
4 and use it at their leisure later on.

5 Okay, welcome Michelle to California.
6 Hopefully our weather today is better here today
7 than it is in Texas, and maybe --

8 MS. FOSS: Well, it's always pretty nice
9 in Texas, you all should come down. It's not a
10 bad place, you know. I was born there, I can say
11 that.

12 First of all, what I want to do for you
13 is correct the affiliation, because as of today
14 we're no longer a part of the University of
15 Houston, we're at the University of Texas, the
16 Center for Energy Economics, hook 'em horns.

17 Given Jim's always extensive thoughtful,
18 excellent input on all of this stuff, what I think
19 I'm going to do -- you've got slides here that I'm
20 giving you for the record for a lot of background,
21 and I think what I'm going to do is actually come
22 down to about here.

23 Because I think this kind of illustrates
24 what he was talking about, and how it's impacting
25 thinking with regard to LNG commercialization and

1 market development and that sort of thing, taking
2 a couple of prominent examples.

3 The Australian northwest shelf
4 arrangement in 1989, the Atlantic LNG arrangement
5 in 1999, and kind of looking at the different
6 markets and market conditions, and bearing in mind
7 that Trinidad is something of an exceptional case
8 with regard to costs of the local faction train.

9 Clearly, there are things out there that
10 are impacting how the LNG business is being
11 transformed, transforming itself, and that is
12 going to play into how terminals are managed, how
13 they're developed, and that sort of thing.

14 Coming in to a market where you have gas
15 on gas competition is obviously a different
16 ballgame than a world in which you have to have
17 something in which to base LNG prices, and oil
18 index pricing has been the norm.

19 Coming in to a world where you have open
20 access conditions that are at play in your
21 interstate markets, that suggests a different way
22 of thinking about how LNG might be received and
23 under what contract arrangements and that sort of
24 thing in a world in which you have a more
25 traditional model, customer owned, operated and

1 dominated model, with less flexible terms and that
2 sort of thing.

3 And in this world where you have more of
4 access to different bases, differentials,
5 different ways of arbitraging the risk, that sort
6 of thing. Where you can earn high returns,
7 obviously that's going to influence how one thinks
8 about the business in a world in which you're
9 really driven by a different set of variables.

10 You're in an energy security dominated
11 situation, you're less concerned about LNG as a
12 commercial business, and more concerned about
13 access to gas supply for power generation and all
14 of the other applications that the Japanese have
15 always had.

16 So, we're in this world in which things
17 are getting transformed. This was provided to us
18 just recently by our colleagues at the energy
19 ministry in Trinidad and Tobago in an attempt to
20 try and keep track of what we're calling short-
21 term arrangements versus long-term arrangements,
22 and so more of a willingness to look at those
23 kinds of contracts and styles of purchasing than
24 perhaps in the past.

25 More of an ability, as Jim pointed out,

1 to do that in the Atlantic Basin than in the
2 Pacific Basin, for a whole variety of reasons --
3 distances, types of players, the dominant Henry
4 Hub, existing locations of terminals, all of those
5 factors relative to liquefaction and so on.

6 He showed you this already, this kind of
7 demonstrates where the short-term export volume
8 opportunities have been, at least as of this data,
9 and where the interest in. And as a single
10 market, or as a dominant market, the United States
11 certainly has a lot of presence.

12 Skipping to, let's just go past all of
13 the commercial issues and come to this point. In
14 fact, this feeds perfectly into the last point he
15 made, which is whether we're in a world where we
16 can realistically look at LNG as a commodity, and
17 can think of it that way, build a business around
18 it that way, and look at how you develop
19 infrastructure and use infrastructure as opposed
20 to other things.

21 This is a host of issues that I think
22 are still relevant, and that have to be
23 considered. Non-standardization of LNG, cargos do
24 vary in quality from location to location,
25 slightly. This is something that's already been

1 discussed. What we know, on the Gulf Coast, is
2 that, because of the kind of customer base that we
3 have on the Gulf Coast that can receive cargos
4 that are a bit more variable with regard to energy
5 content than other locations.

6 Non-standardization in purchase and
7 sales contracts. This is still very true.
8 Depending on both supplier and customer
9 arrangements.

10 Availability of uncommitted ships.
11 Except for the experiment with energy bridge and
12 maybe a few other things, it's still rather rare
13 to look at money coming in to ship building
14 totally on a spec basis. So that is something
15 that possibly could grow, but what everyone would
16 be afraid of is not having that ship have cargo to
17 carry.

18 Port compatibility issues is something
19 that is probably going to come under discussion
20 more. We've been focused on safety and security
21 and haven't really talked that much about the
22 ability for ships of different sizes and with
23 different kinds of cargos and different
24 requirements to be able to go to any point that
25 you would want them to go if you really had a

1 world in which you had optimum flexibility.

2 Impediments to infrastructure
3 construction, well, you all know that, we don't
4 need to talk about that very much.

5 Financing, of course, which hinges on
6 all of this, has tended to be easiest when
7 projects are upgraded and the risks are
8 transparent and can be managed. We had a very
9 good in-house discussion with Taylor Deshong a few
10 weeks ago about pedergas (sp) two, and everything
11 that happened with that.

12 And I think that's a good illustration,
13 that particular project is a good illustration of
14 the kinds of things that come up. There are so
15 many different sources of risk, so many different
16 considerations, and so much surety with respect to
17 revenue flow and cash flow across all of the
18 different contract agreements that have to be
19 linked in a financing arrangement that these do
20 tend to be dominated by entitles that are more in
21 a position to control the value chain.

22 So all of this has implications for how
23 terminals get developed, how access conditions get
24 set, who gets to participate, and what's going to
25 happen.

1 Now, in thinking about what to bring to
2 you all for this workshop, any amount of time that
3 I had to think about it, one of the best bits of
4 thinking I've seen on what could be done in
5 terminal access comes from Freeport LNG, and I
6 thought it might be useful to bring that here and
7 get their permission to talk to you about it,
8 suggest that you follow up with them, because
9 they are a multi-user developer.

10 They're not developing here, they're
11 developing on the Gulf Coast. They have been
12 giving a great deal of thought as to what their
13 role might be in a world in which all of these
14 kinds of factors exist, relative to history.

15 And I agree with their historical
16 interpretation, and I also agree with their
17 overview and their summary of what some of the
18 major considerations are if you're going to be a
19 multi customer/developer of terminal capacity
20 right now.

21 It is true, worldwide, LNG terminals
22 have been developed typically by the end user for
23 the end users own use. Even where we had third
24 party use it was not typically taken advantage of,
25 not typically deployed, for a whole variety of

1 reasons, upstream and downstream, not just the
2 downstream access issue.

3 In the United States all of the existing
4 LNG terminals were originally built for single
5 users, but we're now looking at how to develop
6 terminals at a time when purchasing and selling
7 trends change, the regulatory environment's
8 different, liquidity of the gas market has
9 expanded, and the kinds of business models that
10 can evolve in that.

11 You all know, David and I have talked
12 about this, this is something that's under
13 discussion everywhere. The owner use model is
14 certainly still very prevalent. Developing only
15 for third party use, we have examples of that.

16 Mixed third party and owner use is an
17 intriguing idea, but a very difficult one to
18 develop.

19 Pros and cons. If you're in the seat of
20 an international oil company looking at how to
21 monetize a natural gas resource that you have not
22 been able to monetize to date, obviously you're
23 going to want to be able to manage the risk across
24 the LNG value chain, control the LNG value chain
25 as much as you can.

1 The pro of an owner use terminal in this
2 scenario is maximum operating flexibility. You
3 can time the development of the terminal with the
4 development of your upstream exploitation,
5 liquefaction capacity, and so on.

6 You're putting most of the financial
7 backing in, it can be pretty expensive, and you
8 can get stuck with the unused capacity, it's
9 yours, you've got to live with it.

10 Only third party use. The pro on that
11 is the flexibility for customers to be able to
12 take capacity in accordance with need. If a
13 customer is more risk averse or less risk
14 accommodating that customer might be able to
15 benefit from economies of scale in that kind of
16 terminal management arrangement through the
17 participation of other customers.

18 But in this case, the customer
19 flexibility is contracted, you have to figure out
20 what that is, it has to be articulated in the
21 contract instrument, it takes more skill to manage
22 that, the terminal operator and the terminal owner
23 has less leeway in that world.

24 The mixed third party and owner use
25 model is one that can go awry very quickly because

1 of misalignment of interests between the owner and
2 the customers. The owner has a lot of advantages
3 over the customers still with regard to both
4 contracting for LNG supply and then also access to
5 customers downstream.

6 And it can lead to a lack of
7 transparency. It's very difficult to see in these
8 kinds of models what people are doing, how they're
9 really doing it, what the benefits are, how people
10 are going to participate, and so on.

11 If a multi-user terminal model is
12 developed, then there has to be ways of dealing
13 with tradeoffs. In talking with Freeport and
14 others, these are some of the things that are in
15 play.

16 Letting the customers work it out, and
17 then the operator can treat a group of customers
18 as a single customer for purpose of managing
19 terminal operations.

20 An alternative could be to maximize
21 terminal utilization by restricting customer
22 flexibility. After all, throughput is an
23 important component of getting the terminal built
24 in the first place.

25 Maximizing terminal services and

1 terminal utilization through customer
2 interdependency, trying to find ways of leveraging
3 across all the different customers at the terminal
4 location.

5 And then maximizing services, focusing
6 on that benefit, or that set of benefits, even at
7 the cost of lower terminal utilization in order to
8 be able to get the project off the ground, be able
9 to get the customers the profit return that they
10 could conceivably get in a situation like this.

11 One of the things that is very clear,
12 considering the limited number of participants
13 that are trying to develop new business models, is
14 the bottom point, lack of multi-user terminal
15 experience in the industry.

16 This is something that's going to
17 develop over time, and with expertise, but
18 obviously it's a bit of an experiment to the
19 extent that issues come up, need to be resolved,
20 and there are not solutions or defined best
21 practices or prior experience or that sort of
22 thing to inform the dispute, then it could get a
23 little messy.

24 As I said before, the trick in this is
25 the contracting arrangement itself, the terminal

1 use agreement, and trying to anticipate all of the
2 kinds of issues that would come up.

3 Now this is not anything that I think
4 regulators need be concerned about. I think
5 though that the decision going forward about what
6 kind of access conditions would be granted needs
7 to be done in recognition that this is a market
8 world in which that terminal access could get
9 utilized, and the market participants have to have
10 the ability to work it out, to learn how to deal
11 with it, and be provided a framework in order to
12 be able to engage in those experiments.

13 I think most people would agree that,
14 when you look at the terminal and the re-
15 gasification end of the business, this is probably
16 the cheapest part of the LNG value chain, the
17 cheapest part of what is a fairly expensive global
18 business.

19 To the extent that terminal services can
20 enhance the value that customers get out of LNG
21 apart from just the physical capacity of the
22 terminal itself and the location and the costs of
23 the terminal itself and the location, there eis a
24 lot of room for experimentation and a lot of room
25 to help customers determine what that additional

1 value could be.

2 And these are just some examples that
3 Freeport is arguing right now. The one at the top
4 is one that's obvious in a world in which you've
5 got people willing to develop terminals in this
6 way, and a world in which we want more flexibility
7 in LNG trade.

8 You need a place for short-term, or what
9 we might call spot cargos, to go. You need to be
10 able to clear the market. So that is something
11 that becomes an important component of this type
12 of arrangement.

13 The question is, what might a customer
14 be willing to pay for that aspect of the terminal
15 itself, and is that something that should be
16 reflected in the terminal fee, how is that going
17 to be negotiated, and so on.

18 I think here the final message is the
19 most important one. Flexibility and reliability
20 is not cheap. An industry where, historically,
21 risk has been managed by building for need,
22 designing and building liquefaction to provide
23 contracted supply, designing and building ships to
24 carry specified cargos, and designing and building
25 receiving re-gas capacity to serve specific

1 customer requirements is not a world in which you
2 build in a lot of additional capacity or spare
3 capacity for flexibility.

4 And it's also not one in which you worry
5 about separating services and then trying to
6 figure out how to value the services and how to
7 contract for those services.

8 So this is part of the discovery process
9 that I think everyone has to go through when
10 greenfield projects are built and the larger
11 component is the service provision.

12 And I don't think anyone has a real good
13 feel yet for what the impact on customers is in
14 cost versus benefit and that sort of thing.

15 The other topic that you asked me to
16 address is another form of access, and that is
17 supply access I guess. These are members of the
18 Gas Exporting Countries Forum. They don't like to
19 call themselves a cartel. They had the fifth
20 meeting in Trinidad in April.

21 The countries represented in the Forum
22 thus far are all of the countries that you would
23 expect based on reserves and development, and the
24 interesting thing of note is the sense at which
25 Trinidad and Tobago has been an interesting

1 participant in all of this, viewed to be a market
2 leader in this concept, is not one of the larger
3 reserve holders, but has been very good at
4 commercializing it's participation in the natural
5 gas value chain.

6 And that in fact is the key thing for
7 this organization. It's not a cartelization in
8 the way that OPEC is or has been viewed to be as
9 much as it is a mechanism for exporting countries
10 to participate in the LNG value chain in ways that
11 they would like to.

12 I want to point out that where they do
13 have a cartel could be Russia, a cartel of one,
14 which is why everyone focuses on this question so
15 much, because if you're in Europe this is actually
16 I guess something that you might worry about maybe
17 than we should worry about in the United States,
18 given the diversity of supply here.

19 This is the Trinidad model, and I'm
20 showing you this because the Trinis show it
21 everywhere they go to everyone, and they've been
22 showing it to us a lot because we do a lot of
23 training and capacity building, and in their view
24 what they want to be sure about is that people get
25 the message about what it is that a gas exporting

1 country wants these days.

2 Access for multiple development is
3 clearly one. Access to be able to share in the
4 profitability of the LNG value chain is clearly
5 another. The financial reports of the
6 international oil companies are all probably
7 available and you can look and see how much
8 they're making from their LNG businesses, and if
9 you're a country that participates in that
10 company's financial success then obviously you
11 feel like you ought to be able to participate
12 more.

13 And so those kinds of conversations are
14 going on, and I think it's way too early to
15 speculate on what that might mean with regard
16 ultimately to the upstream value of the natural
17 gas feed stock for the LNG value chain.

18 They want local development, they want
19 local benefits, they want commercial skills, and
20 to get that they are being much more creative
21 about how they participate in their businesses.

22 They're much less likely to just sit
23 back and accept an upstream concession and call it
24 good after that, and much more likely to argue for
25 participation elsewhere in the value chain in

1 order to get what they want.

2 This is an example, again something
3 shared by the folks in Trinidad with us, and
4 they've been sharing it publicly. I can't show
5 you other things that they've been sharing
6 publicly, but I can show you this just because,
7 based on their own survey I think it's a good
8 indicator of the extent to which, at the upstream
9 end, at the liquefaction end, the countries are
10 starting to participate more in realizing value as
11 the natural gas is prepared for shipment.

12 So an increasing amount of interest is
13 being taken by all of the national oil companies,
14 including the Norwegians, in liquefaction as a way
15 of being able to extend their national interest,
16 and protect their national interests elsewhere in
17 the global LNG businesses.

18 Trinidad has a clear advantage for doing
19 this, because they have such favorable shipping
20 rates to the United States, so they've been
21 generating a lot of interest about their ideas
22 about what they would like to do.

23 But that certainly doesn't preclude any
24 of the other producing countries from making
25 similar arguments, and they all are making similar

1 arguments.

2 So I guess those are the major thoughts
3 that I have for you. I don't see why we couldn't
4 imagine a future in which LNG terminals were
5 operated in the most flexible way with regard to
6 access conditions.

7 You would have to be prepared for an
8 instance in which you had an open season and
9 either nobody came to the party or only one person
10 came to the party, because that could happen,
11 which demonstrates the other side of the equation.

12 In this business it's unlikely that
13 people would take capacity and hold capacity on a
14 purely speculative basis. You take capacity if
15 you have access to supply and you have access to
16 customers, and you participate strategically like
17 that.

18 I have a failure of imagination. I
19 don't know, maybe Jim could talk me out of it or
20 someone could talk me out of it when it comes to
21 other kinds of scenarios, but I think that's
22 clearly the case.

23 I think there are a lot of arguments to
24 be made for the owner operated, owner dominated
25 model, especially where risks and feasibilities

1 are either larger or not fully defined. And I
2 think that may be the case with respect to some of
3 the offshore projects.

4 And then with regard to some of the gas
5 exporting countries, I guess the thing that I
6 would say there is that it's a relationship
7 business and people so far get along very, very
8 well, and I don't see why that should change.

9 I do think that Jim's right, that
10 natural gas and oil are very different things, and
11 I think that people view them in very different
12 ways, and I actually think that the gas business
13 for exporting countries is actually better in
14 terms of engagement because there is more of an
15 interest in commercial participation and less of
16 an interest I think just from a political
17 rationale for having something like the Forum
18 exist.

19 And that's it.

20 MR. MAUL: Michelle, thank you very
21 much. We have a lot to talk about, and obviously
22 a short time here, but we're going to have a few
23 questions here. Joe?

24 COMMISSIONER DESMOND: As I was thinking
25 about what you said about some of the challenges

1 under alternative models, it struck me that
2 perhaps we haven't considered enough attention in
3 this Agenda for the subject of gas storage and gas
4 storage markets.

5 Because I think that the combination of
6 access, you take advantage of opportunities,
7 whether it's spot price differential or even
8 additional arbitrage by being simply able to swap
9 cargos with what's in storage and what's on the
10 sea and divert them.

11 So maybe you can comment on how you see
12 the gas storage fitting in with this issue of
13 access?

14 MS. FOSS: Part of a commercial strategy
15 for anyone, I think, at least what we see anyway,
16 is being able to couple both terminal storage with
17 conventional gas storage, and to be able to use
18 those to be able to take advantage of price swings
19 in the marketplace, deal with different customers
20 needs, and all of that.

21 Now that's been very active on the Gulf
22 Coast, I don't know what you're seeing up here on
23 the West Coast. There are three or four, at
24 least, significant proposals for coupling LNG
25 development with conventional gas storage, and I

1 think that's a good illustration of what needs to
2 be done or how things could develop.

3 So again, I think that's a market
4 arrangement. I think that's something that people
5 will sort out and figure out on their own in a way
6 that fits best with their own profiles.

7 MR. MORSE: I had one question. If
8 there is no equivalent of OPEC as of yet in the
9 LNG countries that are exporting, but some day
10 there's at least a potential, is there anything
11 that a consuming nation could try to do now to try
12 and help prevent that from happening? Any
13 recommendations you would have?

14 MS. FOSS: Well, if a national company
15 or a national entity set up to represent the
16 interests of the exporting country and it were
17 such that, say, that entity wanted to take, say,
18 downstream capacity in the United States, we might
19 let that happen, or I would suggest that we might
20 want to let that happen as a way of making sure
21 that they were fully engaged.

22 And wondering more about the business
23 and understanding the risks of both high price and
24 low price scenarios for their particular product.
25 So it's really, there are those kinds of

1 opportunities, these are the sorts of things that
2 are under discussion.

3 There are some very interesting
4 proposals being made to certain countries with
5 regard to participation in the US market. So I
6 think if that happens it's something that we
7 shouldn't be surprised about or should try to
8 limit or discourage in any way.

9 Because I think it gives them a stake in
10 the market as well. And I think their interests
11 are different, I don't think their interests are
12 totally economic rent focused, and I think they
13 are much more focused on economic development at
14 home, at least that's sort of where the status is.

15 So I think there's an opportunity now to
16 make sure that it doesn't go the way perhaps an
17 OPEC or other attempts at building cartels have
18 gone in the past, and have it be something in
19 which the arguments they're making, which are very
20 valid arguments, it's their resource and they're
21 trying to figure out how to benefit from it in the
22 most constructive way, and what we need to do is
23 give them an opportunity to see that and to
24 realize that and I think you could offset
25 pressures in the future that way.

1 MR. MAUL: Thank you, again, Michelle,
2 for taking time out from your schedule and
3 stopping over on your way out to the Far East.

4 Okay, our next speaker here is Dr. Paul
5 Carpenter of The Brattle Group. And Paul, we sure
6 appreciate your flying out here a long way and
7 joining us here today.

8 MR. CARPENTER: Actually I didn't fly
9 that far, just down from Oregon, but it took me
10 forever. I got in four hours late because the
11 plane hit a coyote on the runway. Which is a
12 first for me. This is after the plane blew a
13 tire, and had a two hour maintenance delay.

14 So the airline industry has some work to
15 do.

16 MR. MAUL: Well, we're glad your here.

17 MR. CARPENTER: Thank you. By the way,
18 I was thinking that I'm a day late because I was
19 going to announce here publicly for the first time
20 that, as a teenager, I was Deep Throat, but now
21 that's been surpassed. Anyway, thank you for
22 inviting me to speak.

23 The organizers of the workshop have
24 asked me to cover a number of different topics,
25 and some of them wander around a little bit. So

1 I'm hoping that this is coherent.

2 In terms of a table of contents, I
3 thought we'd talk a little bit about the
4 objectives for an LNG regulatory policy towards
5 LNG terminals. So I'm going to be talking about
6 the downstream side of the business, as opposed to
7 the upstream that Jim and Michelle were focused
8 on.

9 I'm going to talk about the tradeoff
10 that's implicit in this whole discussion between
11 open access in LNG terminals and what's sometimes
12 referred to as security of supply. I'm going to
13 talk a little bit about FERC policy and where
14 that's going in this respect.

15 You've asked me to talk about the
16 Europeans, so I've got a section where I'm going
17 to talk about Europe. And then I'm going to make
18 some observations on the current structure of
19 California's gas market and how that might impact
20 LNG terminal access policy.

21 So in terms of objectives, I think most
22 of us would agree that any regulatory policy
23 toward LNG should first seek to promote gas on gas
24 competition in some sense. We want to permit
25 economic LNG projects to be built at efficient

1 scale.

2 Again this is assuming that the other
3 issues, environmental issues, safety, and those
4 hurdles are surmounted.

5 And finally, it seems to me we don't
6 want to have a policy that discriminates between
7 rival projects. And here I include non-LNG supply
8 projects, because there are possibilities, as Jim
9 mentioned, with respect to the Alaskan gas for
10 example, which already have access to California
11 and could have increased access to California. So
12 it seems to me you want your access policy to be
13 consistent.

14 It's pretty clear, at least to me, that
15 not all the projects will be built and so what you
16 want are the best projects at the best time. So
17 that's the grand objective. Implementation is a
18 bit more difficult.

19 Turning to this question of the tradeoff
20 between third party access, or what I'm going to
21 call TPA, versus security of supply. This is
22 frequently the way that the debate is discussed,
23 particularly in Europe.

24 On the one hand, you have the side that
25 says third party access to LNG terminals, or any

1 infrastructure process, promotes gas on gas
2 competition, that's one of our key objectives, by
3 giving LNG suppliers and, importantly, buyers
4 additional choice in the market.

5 That includes spot deliveries and
6 purchases, trading of secondary capacity on the
7 secondary market, and etc. And it may also help
8 avoid the potential for the exercise of market
9 power under certain market conditions, which I'll
10 talk about in a bit.

11 On the other hand, third party access
12 may increase the risk associated with the
13 projects, thus threatening security of supply if
14 its a key source of gas in the future, and
15 important for price as well, by making those
16 projects harder to develop and harder to finance.

17 Now, Jim referred to the downstream view
18 versus the upstream view, and I'm going to be
19 talking mostly about the downstream view, but I
20 have a little bit of a different view on what the
21 UK is doing, so remind me and we'll return to
22 that.

23 But from a downstream point of view,
24 it's always curious to me as to why we think of
25 LNG terminals as something substantially different

1 than a pipeline project. Jim referred to them as
2 part of a transportation chain. It is a source of
3 gas that is effectively like an interstate
4 pipeline.

5 And there are a bunch of economic
6 features of LNG terminals that are like pipelines.
7 For example, once the terminal's built, the
8 investment is sunk, it's difficult to redeploy to
9 another use if the market changes.

10 That means they're risky projects, but
11 pipelines are risky projects too. The efficient
12 scale for a terminal is not unlike a large
13 interstate pipeline, in the 600 to 1,500 million a
14 day range.

15 Long-term contracts for the use of the
16 facility are frequently important in underpinning
17 the investment and obtaining project financing.
18 That's true of pipelines as well as terminals.

19 There are environmental and safety
20 issues that are present. Now perhaps more so with
21 LNG, but those issues exist with respect to
22 pipelines, and make them risky projects.

23 A key difference, and one that Michelle
24 hinted at, is that if the terminals are located
25 close to market and if the interconnecting

1 infrastructure permits it, LNG terminals offer
2 flexibility benefits in the form of storage and
3 peak delivery that perhaps a big pipeline does
4 not, and so we need to think about whether that
5 affects one's view of access policy.

6 Michelle also mentioned some things that
7 I think we should take note of, which is there may
8 be some coordination issues with respect to multi-
9 user terminals or open access terminals.

10 I remember 15, 20 years ago we had this
11 debate about whether we could have open access on
12 interstate pipelines, because there'd be all these
13 coordination issues between multiple users and
14 holders of the capacity.

15 We got through those, and I think her
16 observation that it may just take some time, with
17 respect to LNG terminals, to also work through
18 those issues.

19 So, if they're like pipeline projects
20 should we apply the same access regulations to
21 terminals as we do to the pipelines? Again,
22 there's two sides to this.

23 Answer no, they may not get built
24 because they may be too risky and our future
25 supply will be less secure.

1 Answer yes, there's some good reasons
2 for why we have access regulations that apply to
3 pipelines and these rules have not obviously
4 prevented the construction of new economic
5 pipelines, even into California.

6 Now FERC policy on LNG access, as I'm
7 sure nearly everyone in the room knows, has
8 evolved. FERC has carved out an exception for LNG
9 terminals from its standard open access policy.
10 This is in the Hackberry LNG decision of 2002.

11 The argument was based on what I'm
12 referring to as a security supply argument, but
13 implicit in the decision is the need to boost
14 investments in LNG terminals because they were
15 risky and the view was that they might not get
16 built.

17 But there were some countervailing
18 factors that gave them comfort here that they
19 could do this. First, Hackberry was a new
20 entrant, so they didn't feel there were
21 significant competitive issues, particularly in
22 the regional market for gas supply in the Gulf.

23 And a specific finding regarding a lack
24 of market power by the terminal in that location.
25 So in that sense that was a fact specific set of

1 conclusions reached by the FERC after looking at
2 the evidence.

3 What's happened, however, as this policy
4 has been carved out as an exception, as I said,
5 it's being applied, for example, with respect to
6 Cold Point and its terminal expansion project
7 going forward. That's been protested at the FERC,
8 and we'll see where that goes.

9 But, perhaps somewhat importantly, the
10 recent legislation that's just come out of the US
11 Senate would actually take the FERC Hackberry
12 exception and codify it in legislation.

13 And if you look at the May 21 bill
14 version that came out of the Senate, I believe,
15 and I'm going to just read specifically from it,
16 this is page 97, "the Commission shall not:

17 1. Deny an application solely on the
18 basis that the Applicant proposes to use the
19 liquefied natural gas import facility exclusively
20 or partially for gas that the Applicant or an
21 affiliate of the Applicant will supply to the
22 facility; or, even condition an order on a
23 requirement that the liquefied natural gas import
24 facility offers service to customers other than
25 the Applicant or any affiliate of the Applicant

1 securing the order;

2 2. Any regulation of the rates,
3 charges, terms, or conditions of service of the
4 facility, or

5 3. A requirement to file with the
6 Commission schedules or contracts related to the
7 rates, charges, terms, or conditions of service."

8 So basically FERC is being told that it
9 cannot condition any, apply any access conditions,
10 and moreover not even require information
11 disclosure with the regulator. So that takes the
12 Hackberry decision and essentially would codify
13 it.

14 Now, in thinking back on the comparison
15 I was making earlier between LNG terminals and
16 pipeline projects, contract that with FERC's
17 policy that they just expressed at the beginning
18 of the year with respect to open season for the
19 Alaska Pipeline projects.

20 There -- and this is from the February
21 9th order, 2005 -- I'm going to read to you from
22 paragraph 12. And this is FERC speaking:

23 "We are well aware of the risks to
24 competition imposed by a project that is owned or
25 primarily sponsored by a small group. Thus we are

1 imposing strict requirements on all proposals, and
2 particularly on affiliate owned projects, with
3 respect to the public disclosure of information,
4 to ensure that there is a level playing field."

5 "As we discuss below, we will require
6 applicants for an Alaska Pipeline project to
7 provide detailed information as to project design,
8 how capacity is to be allocated, and any proposed
9 rates, terms and conditions. This will allow us
10 to be in a position to monitor whether competition
11 for capacity is fair."

12 "In addition, while we are permitting
13 pre-subscription for anchor shippers, we are
14 requiring that contracts with such shippers be
15 made publicly available and that all shippers
16 seeking the same type of capacity be offered
17 service on the same terms and conditions."

18 Now, if the national policy is to be so
19 concerned that we get enough upstream investment
20 so that we don't run out of gas, why do we apply
21 one set of standards to the Alaska Pipeline
22 project and a different set of standards to LNG
23 import terminals?

24 So, enough on that. Let me turn to the
25 Europeans. The Europeans have been working on

1 this problem since 1998, roughly, when they first
2 published the EU European gas directive. By the
3 way, that directive was subsequently amended in
4 2003.

5 And they've been attempting to implement
6 policies to create a Europe-wide competitive
7 market for gas and electric power. They've had
8 several concerns in developing this policy.

9 One was over security of supply.
10 Currently Europe is supplied minimally by
11 indigenous supplies from Germany and the Belgium
12 area. The North Sea has been a tremendous
13 supplier of the UK, and as Jim said, by the
14 interconnector to the continent.

15 Indigenous supplies are in decline, the
16 North Sea is plateauing, Norway is backfilling the
17 North Sea. The other two alternatives for Europe
18 are Russia, which has been a huge supplier, and
19 LNG. So Europe has been very concerned over
20 security of supply.

21 They've also been concerned about the
22 competitive positions of the incumbent firms.
23 Essentially this is the unification of a set of
24 gas markets that were dominated by either state-
25 owned entities or very large monopolies. And so,

1 how to make that work into a competitive inter-
2 European system is what they've been seeking to
3 accomplish.

4 So the gas directive requires member
5 state regulators to apply regulated third party
6 access principles to pipelines and LNG terminals,
7 with ultimate oversight by the European
8 Commission. So that's the default, and they have
9 a policy for granting exemptions from third party
10 access if certain conditions are met.

11 I'm going to skip by the map for just a
12 second. I'll probably talk about the conditions.
13 This is an indication, by the way, these policies
14 have not prevented either the construction of new
15 LNG terminals or proposals to build new LNG
16 terminals.

17 In fact, as Jim mentioned -- I'll talk
18 about England in a minute, there's a good argument
19 that England is going to be oversupplied, and
20 that's also true of Spain I think, perhaps for
21 different reasons.

22 But in any case, what are these
23 exemptions cases. Well, these are the principle
24 four.

25 You can get an exemption from third

1 party access in Europe if your LNG terminal
2 project risk is such that "the investment would
3 not take place unless an exemption was granted."

4 Second, "the exemption must enhance
5 competition."

6 Third, "it must enhance security of
7 supply."

8 And finally, "it must not harm the core
9 regulated system to which the infrastructure is
10 connected."

11 Now the first one is interesting. How
12 do you show that something wouldn't be built but
13 for getting an exemption? Well, the places where
14 this has been tried have been in the UK LNG
15 terminal exemptions.

16 And the UK regulator, Opgen, has already
17 granted three exemptions from third party access.
18 And basically what Opgen has done is taken the
19 sponsors word at face value that they would not
20 invest in the project if they didn't get an
21 exemption.

22 From an economist's point of view it was
23 really disappointing to see that there was no
24 actual evidence that Opgen put forward. Even more
25 interestingly, the Isle of Green project, which is

1 one of the three exemptions, actually started
2 construction before it got the exemption.

3 So it's a little bit hard to argue that
4 you wouldn't have built it unless you got it.
5 Maybe they would have stopped. But, in any
6 case --.

7 So, exemptions have been granted. But
8 these exemptions are not unconditional, and I
9 think this is what's important for us to think
10 about. The UK regulator requires terminal
11 operators, even though they have exemptions from
12 third party access, to employ anti-hoarding, or
13 so-called "use it or lose it", UIOLI, it now even
14 has an acronym, provisions and contracts with
15 users.

16 It requires capacity, it prefers
17 capacity allocation through open seasons. It gave
18 one exemption on the grounds that it was okay that
19 they didn't, they have them a pass on it.

20 Information disclosure is required to
21 the regulator in all cases, with electronic
22 bulletin boards to encourage interruptible use and
23 a secondary market to develop if possible.

24 And if the terminal operators is
25 affiliated with the downstream entity, such as a

1 pipeline operator, the UK exemptions require
2 strict ring fencing.

3 An exemption can be removed if the
4 regulator finds an exercise of market power, and
5 at least the UK regulator takes an active role in
6 monitoring that.

7 Now, with respect to other EU countries,
8 Italy and France, under this policy, have required
9 LNG terminals to set aside a certain amount of
10 capacity for third party use -- Italy 20 percent,
11 France 10 percent.

12 Spain is a little bit different, because
13 it's such a centrally planned approach, but they
14 require 25 percent of the contracts with the
15 terminal to be short-term, meaning less than two
16 years in duration.

17 It's not clear to me that these are
18 sensible numbers, that they produce the right size
19 terminals, there's not a lot of economic basis
20 behind them, but it does reflect at least a
21 European view that there should be some spare
22 capacity for third party use.

23 Spain's situation is a little bit
24 different. Spain has always been worried about
25 security of supply. 60 percent of its supplies

1 come from LNG. It has a limited interconnector
2 capability to France. It has some indigenous
3 supplies.

4 So what's happened is Spain has employed
5 a very strong overlay of government central
6 planning to the decision to build terminals and to
7 regulate terminals. Their terminals are subject
8 to strict regulated tariffs, there are actually
9 postage stamp and connect in with the transmission
10 and distribution charges downstream.

11 One thing this has done is it's created
12 a bizarre circumstance in which the terminals that
13 are located closest to Africa and the Middle East
14 tend to get filled up first, and recently the
15 terminal in Bilbao was pretty slack, and that's
16 because their pricing system doesn't reflect
17 anything about the advantages of location, so
18 naturally you want to ship to the cheapest place
19 that you can, if all the terminals are getting the
20 same price essentially.

21 So, to summarize the EU situation, third
22 party access is the presumption, exemptions have
23 been granted, but those exemptions typically have
24 conditions that attempt to prevent the exercise of
25 market power or to provide information disclosure

1 to the regulator.

2 And again, that to date has not slowed
3 down the prospects for new terminals.

4 Now I'm going to turn to California.
5 And this is the picture that everybody uses. It
6 needs to be updated, showing the supply sources.
7 PG&E no longer owns number 9 there, that's now
8 TransCanada. And the picture doesn't show the
9 southern trails pipeline from the Rocky Mountains
10 to Southern California, but that's now been built.

11 But what I want people to take away from
12 this is that California has enjoyed a diversity of
13 access to supply basins historically that rivals
14 anywhere else in the US in terms of the economic
15 variety of the producing basins.

16 The issue has not been what producing
17 basins to get access to. The issue in California
18 has been pipeline capacity and getting that access
19 to market.

20 So, if we take a snapshot in 2003, about
21 18 percent of California gas came from in-state
22 sources. That's flat to declining in production.

23 26 percent came from Canada, the Western
24 Canadian Basin is plateauing in terms of its
25 conventional production, but we're seeing growth

1 in unconventional and from tier gas from Alaska
2 and from the Kinsey Delta, which has a very large
3 potential and is economic at current prices, just
4 as LNG is economic at current prices.

5 14 percent in 2003 came from the
6 Rockies, that's a supply basin that's growing and
7 has been one of the cheapest basins, relatively
8 speaking, in the US.

9 42 percent came from southwest supplies,
10 which for the last fifteen years or so has been
11 the price setting source of supply to California.
12 It's also the source of supply that has been most
13 closely connected to the US Gulf Coast.

14 Other factoids to keep in mind.
15 California is dependent on in-state storage to
16 meet peak demands, as I think was mentioned
17 earlier. While we have liquid trading at the
18 Southern California border and the PG&E city gate,
19 California and the west does not have an organized
20 futures market ala NYMEX that is as extensive in
21 terms of liquidity of forward trading as NYMEX.

22 As long as you're going to be continue
23 to be connected into NYMEX economically that's no
24 problem, because you can hedge, but when you get
25 disconnected that becomes a problem, as we saw in

1 2000-2001, in part.

2 Let me say, just to digress a moment,
3 natural gas is extremely important to electricity
4 in California, probably more so than any other
5 state or region in the country. Gas-fired
6 generation is about 60 percent of installed
7 capacity, but that gas is "on the margin" most of
8 the time, and nearly always during peak periods.

9 Meaning that it is the price setting
10 generator. Thus, when you have an increase in the
11 price of gas that translates directly into
12 electricity prices most of the time in California,
13 and particularly during peak periods.

14 Finally, the bulk of projected gas
15 demand growth in California is in the power
16 generation sector, and that's particularly true in
17 Southern California. Residential demand growth is
18 maybe increasing slightly, but it's not what's
19 driving the equation here.

20 So, should California worry about
21 security of supply? And I'm going to make a
22 number of statements here which I'm sure are
23 debatable and I'd be happy to debate. I think
24 they're all very interesting questions.

25 First, does California already have

1 enough security of supply by virtue of the
2 diversified access it has to North American gas
3 fields? In other words, are we comfortable that
4 California is already plugged in to the national
5 market for gas? Maybe not.

6 While more diversification is
7 undoubtedly good, LNG terminals located in the
8 west are unlikely to significantly affect future
9 gas prices relative to other regions, unless we
10 build significant excess capacity. This was Jim's
11 point. You put up the picture of what happened
12 when we built PGT's last expansion, and the basis
13 differential shrank for a long period of time.
14 That was a case in which we built excess capacity
15 into California. It had an effect on price.

16 The irony of all of that is, what
17 happened is that unloaded the El Paso pipeline, if
18 you remember, and we had a lot of debates in San
19 Francisco in which many in the room, and I was
20 involved, thought about what to do with the
21 stranded costs associated with the excess pipeline
22 capacity? Who was going to pay for it?

23 And then, the pipeline that was the most
24 impacted, El Paso, decided that when that capacity
25 got turned back to them they would hold it as a

1 block and ultimately sell it to its affiliate
2 after it sold it in a block to Dynergy, and we all
3 know the story after that.

4 A major part of the California energy
5 crisis was what happened, what El Paso did with
6 that big block of capacity, and what it didn't do
7 when demand ultimately grew to make that capacity
8 critical for supplying the market.

9 Now I'm not saying there's any potential
10 parallel here in the future, but think about if we
11 really want price decreases in California with the
12 introduction of new LNG, and we build significant
13 excess capacity. I think it's worth thinking
14 about who holds that capacity, and do we want it
15 held in the hands of a couple of big suppliers?

16 It would be good for awhile, but what
17 happens when the market starts to tighten up? Do
18 we have confidence that there's enough competition
19 that that last block of capacity will not be
20 withheld or hoarded from the market to affect
21 price?

22 We've had disconnections in California
23 between the gas price here and the North American
24 price, but in the past it's been due to pipeline
25 and storage constraints and evidence of anti-

1 competitive conduct, as we saw during the energy
2 crisis.

3 Southern California has one more issue
4 that I thought I should mention, and it was
5 mentioned in the early presentation this morning.
6 There is substantially more import pipeline
7 capacity in the SoCal gas system than it is
8 designed to accept. 6.1 of the interstate
9 capacity coming in, versus 3.9 takeaway capacity.

10 Now, the other thing to note is that
11 access to firm transportation capacity on the
12 SoCal gas system is not yet possible on an
13 unbundled basis, unlike Northern California,
14 unlike other interstate pipelines.

15 Third, SoCal gas, I say, has no
16 incentive to expand total receipt point capacity.
17 I would say it has conflicting incentives to
18 expand total receipt point capacity, particularly
19 as that impacts the non-core, meaning the
20 customers that SoCal gas does not have the utility
21 obligation to serve under the CPUC's regulations.

22 What this all means from an LNG point of
23 view is that it makes it difficult for a new LNG
24 entrant, or indeed for any entrant -- new
25 interstate pipeline, for example -- to find anchor

1 buyers for project supply. For example,
2 electricity generators.

3 One reason, for example, that the
4 southern trails pipeline stops at the border, and
5 has not pursued as yet, and in effect has
6 abandoned the conversion of the southern trails
7 pipeline into the Los Angeles Basin.

8 So, should third party access policy be
9 applied to LNG terminals in California? Well, I'm
10 not sure I can say definitively, but I would say
11 yes. And I would defer to the attorneys on the
12 question of what jurisdiction California has to
13 impose this. In any case that's, I gather,
14 something you'll be talking about.

15 Should we have open seasons? It seems
16 like a good idea, because you want to know whether
17 there's demand for capacity, what projects might
18 succeed over others -- open seasons right now are
19 really the only way we have of having a market
20 test for new projects where there are competing
21 projects, and clearly you've got competing
22 projects right now.

23 Should we have use it or lose it
24 requirements, or anti-hoarding provisions? There
25 I think the answer to that depends on what the

1 allocation of the capacity might look like after
2 an open season. If it looks like there's a number
3 of holders of capacity who can compete maybe you
4 don't need anti-hoarding provisions.

5 Should we require electronic bulletin
6 boards and secondary trading facilitation for spot
7 supplies or short-term availability? Seems like a
8 good idea.

9 Should we exempt them on the grounds
10 that the terminals would not be built otherwise?
11 That's a harder one, and I would say if you want
12 to pursue that I would take some evidence and look
13 at the facts instead of taking the Opgen UK
14 approach of just saying well, we're going to
15 assume that these are risky projects and therefore
16 they wouldn't be built.

17 I've already talked about the lessons
18 from the 2000-2001 energy crisis, and how that
19 might impact the holders, particularly if there's
20 a large holder of a marginal source of supply into
21 California, from an economic perspective.

22 And I've talked about these on the last
23 slide, 20. So with that, I'm happy to take any
24 questions or discussion.

25 MR. MAUL: Good. Paul, thank you very

1 much. There's a lot of food for thought there.

2 Chairman Boyd?

3 COMMISSIONER BOYD: Again, I don't know
4 if this is a question or a request that you
5 comment on something. I for one, just personally,
6 have been interested in Alaska gas in the form of
7 LNG, but it's fraught with all kinds of problems,
8 maybe more political than otherwise, but they do
9 have the Jones Act dilemma that they think they
10 can conquer, some do anyway --.

11 And even though there's been a majority
12 of vote with the people of Alaska that's the way
13 they want to see their gas delivered the
14 politicians up there have had a tough time knowing
15 which way to go.

16 And if it goes through the politically
17 expedient pipeline and is joined with Mackenzie
18 Gas, I, for one, have tended to see that gas
19 tending to go east, midwest and east, not west to
20 California. Even Rocky Mountain gas, future
21 development, seems to want to go east, not west.

22 Which is why I, for one, have been
23 interested in California's future need for gas
24 potentially being that pipeline from the west,
25 i.e. LNG.

1 Do you have any different views about
2 where all that gas above the border might be
3 heading?

4 MR. CARPENTER: Yeah, two comments.
5 One, even if the Alaska gas goes east, what that
6 does is it frees up conventional WCSB gas to
7 continue to go south. And that's even if you
8 built a bullet pipeline all the way to Chicago,
9 bypassing the whole TransCanada arrangement.

10 The second comment is, if you did such a
11 thing and all that gas went to Chicago, what that
12 would tend to do is drive down prices in the
13 Southwest, and push that cheaper gas into
14 California. As you remember, California's gas
15 prices really net forward from the Southwest
16 producing basins.

17 So, I tend to take less of a view of
18 physically where the gas is going, and more
19 economically where the pressure on the gas bubble
20 as it were will occur, and how that will impact
21 prices.

22 COMMISSIONER BOYD: Thank you.

23 MR. MORSE: Yes, we have heard in the
24 United States that if there is any requirement of
25 the access for third parties for LNG projects that

1 they won't get filled. You said that in Europe,
2 even if it's managed access, where the first
3 priority goes to the operator of the LNG terminal,
4 but third party access is available on an anti-
5 hoarding mechanism, so these projects are still
6 being built anyway.

7 Do you see any reason why you could not
8 extrapolate from Europe to the United States?
9 That there'd be any difference?

10 MR. CARPENTER: Well, getting past the
11 economical questions, siting in the US is much
12 more difficult. And so, you know, I think that
13 the economics are the same. I don't see a
14 substantial difference in the incentives to build
15 terminals by virtue of what you think future gas
16 prices are going to be here versus there.

17 But it may be that, since it's easier to
18 build terminals there, you can absorb the tax as
19 it were of third party access easier there than
20 perhaps you can do it here.

21 MR. MAUL: Okay, Paul, thank you very
22 much for coming out here and talking to us. We're
23 going to have more conversation on these topics,
24 but this has been very helpful.

25 Okay folks, we're at the lunch break.

1 We will be starting right on time at 1:30 with a
2 very full afternoon.

3 (Off the record.)

4 MR. MAUL: We're back from our lunch
5 here. Any comments from Chairman Desmond or --?

6 COMMISSIONER DESMOND: Just a general
7 comment, we're all enjoying the beautiful weather
8 outside, so if you have a chance to step out. I
9 hope you enjoyed your lunch.

10 Again, I think what we heard this
11 morning was a tremendous amount of content, really
12 content rich presentations that, once the
13 information is posted on the web will provide us
14 an opportunity to go back, and once we conclude
15 the end of the day we'll probably have a series of
16 questions.

17 So I want to remind people today, if
18 they're not here or listening in, and what to
19 submit any questions in writing based on what they
20 heard or based on a review of the information
21 posted on the web, that we'll be sure and include
22 those responses in the final report.

23 But I'd like to welcome our next panel,
24 and am very much interested in hearing what they
25 have to say about financing on the LNG Access

1 Workshop. Thank you.

2 MR. MAUL: We have with us today on our
3 panel on financing a trio of folks who cover a
4 wide range of areas, and i'm pleased to introduce
5 Dino Barajas, a Partner with Paul, Hastings,
6 Janofsky and Walker; Richard Chinloy, who is the
7 Director of Corporate and Structural Financing
8 with ANZ Investment Bank; and Paul Clifford, a
9 Senior Vice President for Standard Charter Bank.

10 All of them have LNG investment
11 background and experiences, and we're basically
12 here to listen to them to find out what we need to
13 understand from a California perspective as we get
14 into this access issue that still keeps California
15 an attractive business investment environment.

16 So, Dino.

17 MR BARAJAS: Thank you very much, my
18 name is Dino Barajas, a Partner with Paul,
19 Hastings. What we'd like to do is first Richard
20 will go through his presentation, and then Paul
21 Clifford will briefly go through his presentation,
22 and I'll do a quick summary, and we'll do
23 questions at the end here.

24 MR. CHINLOY: Good afternoon, my name is
25 Richard Chinloy. I'm with the ANZ Banking Group.

1 I'd like to thank the program organizers for
2 inviting me to give a few remarks on the financing
3 aspects. I wasn't quite sure what direction to
4 take this, but we're open for questions if perhaps
5 we haven't covered all the ground.

6 A quick overview of who ANZ Bank is.
7 We're a Melbourne-based commercial bank. We
8 operate in 25 countries throughout the globe,
9 although the focus of our business is primarily in
10 the Austral-Asian and Asian markets.

11 We have LNG teams in New York, London,
12 and Singapore. Many of you, this is slide three,
13 have seen this LNG chain link before, I think Paul
14 and I are using the same ones. I'll just go
15 through it quickly.

16 They say ships take a long time to get
17 there. We visual ships as a floating pipeline to
18 a certain extent. I understand through statistics
19 that a ship goes 6,000 miles per delivery. Re-gas
20 is really the focus here, so it's in a different
21 color at the end markets.

22 Down below is just a smattering of
23 representative transactions that ANZ's been
24 involved in one role or another.

25 I'll go quickly through this. This is

1 slide 4. Many have seen this before, the FERC
2 statistics. But if you've actually counted up the
3 BCF per day, it's 65 billion BCF. I would just
4 make the comment that I think I found a statistic
5 that the global capacity of terminals throughout
6 the globe is about 40 BCF per day. So obviously
7 there's a lot here that will get built.

8 Not only is there 40 BCF throughout the
9 globe of terminal capacity, only about 17 or 18 is
10 actually delivered. So there is excess capacity
11 built into the system.

12 Again, I'll go quickly through this.
13 This is just the opportunities for LNG in ports in
14 the US.

15 Different statistics are used, these are
16 the EIA numbers. Trying to figure out from a
17 lender's standpoint where the US would stand in
18 the marketplace. So by 2010 the EIA is calling
19 for about 6.8 BCF per day.

20 We try to translate that into the number
21 of terminals, and I've sort of come up, after you
22 deduct the five existing terminals maybe there's
23 room for six re-gas terminals, but the reality of
24 the marketplace is that re-gas tends to be over-
25 built, if you will.

1 There's a natural order for excess
2 capacity in the globe. I understand that maybe 45
3 percent of capacity is used and the rest is
4 considered excess or spare capacity.

5 Just a financing backdrop. Of the 58
6 proposed re-gas developments, clearly not all of
7 them are going to get built, I think the FERC has
8 used a number of maybe 8 or so, maybe 8 or 10. To
9 some extent that would still be some spare
10 capacity in the US.

11 There is right now a race to build re-
12 gas terminals, and trying to get first mover
13 advantage. This suggests that the financing
14 process also has to follow suit, and be efficient
15 and an expedited process.

16 Receiving terminals then are in the
17 middle of the value chain, so lenders have to look
18 at both sides, upstream and downstream, when
19 analyzing the risks inherent and the fundamentals
20 in any one project.

21 Just a quick comment on closed or open
22 access. I would say that, on the closed access
23 basis, it does offer a fairly simple structure, a
24 much simpler structure for lenders in general, and
25 does facilitate a more efficient and expedited

1 financing process.

2 It's because there's a stable
3 environment for lenders to get their arms around
4 and try to manage their risk analysis, and there
5 also is a tendency for fewer counter parties
6 involved.

7 Open access certainly can be
8 accommodated in my view, although this is
9 certainly not necessarily the format in the US
10 right at this minute. We all have done pipeline
11 financings, and many have been quite successful in
12 the past on an open access basis based on, again,
13 shipper type transportation contracts.

14 I would say though that it does take
15 somewhat of a longer prolonged process for
16 financing, because of tying all the contracts
17 together and harmonizing them.

18 A quick not on natural gas. I put this
19 up, which is the Henry Hub spot, just to show
20 that, with LNG terminals one would have to take a
21 long-term view, and I guess with the price
22 volatility it's very hard to really get your arms
23 around it.

24 So to a large degree the high prices in
25 the US is really the rules driving LNG

1 development, but from a lender's standpoint it's
2 somewhat of a thorn because it's the key risk that
3 has to be addressed.

4 There are perhaps four or so major
5 project financing structures discussed for
6 terminals. The first one perhaps is the
7 petroleum-type arrangement. It's really in the
8 contract form of a terminal use agreement that
9 provides contractor capacity.

10 I try to distinguish in my own mind the
11 concept of contracted and non-contracted, and
12 tolling is a form of a contracted format. It
13 provides a fixed service fee supporting what can
14 be viewed as stand alone financing. In other
15 words, it protects against both the upside and
16 downside inputs in the chain, and allows you ring
17 fences for the lender, an environment that can be
18 measured and managed and evaluated.

19 The next type would be the integrated.
20 And the integrated format is somewhat broad
21 because it captures both the old style Japanese
22 type contracts as well as the new type, which many
23 have called the arbitrage format, the new wave.

24 It can be a single financing
25 encompassing the entire chain, or it could be a

1 series of interrelated financing, which perhaps
2 has been the norm in the past. So you have a
3 separate re-gas financing, you'd have a separate
4 ship financing, and you'd have separate
5 liquefaction.

6 But by and large they're all linked
7 together under the sponsorship of the major
8 developer or sponsor of the chain along the entire
9 project.

10 Rate-based is the other theoretical
11 format. I don't think we have seen this so far.
12 It would be the typical utility type financing,
13 which is more corporate credit type of lending.

14 Rate base could incorporate private
15 financing as well if the utility decided to have
16 something similar to a tolling agreement just for
17 the receiving terminal.

18 The last may be merchant. Merchant is
19 largely un-contracted, no contracts or very few,
20 and again it would be subject to volume and price
21 risks.

22 The first form is tolling. It seems to
23 be emerging as the winner, the preferred financing
24 format in the US. Examples have been the Sabine
25 Pass, which has the financial close and the

1 Freeport transaction which is upcoming. It may be
2 a little bit of a hybrid because there are other
3 forms of financing in there.

4 Tolling is a take or pay type contract,
5 and it's a real service. The toller, the project
6 itself, the re-gas terminal, does not take title
7 to any of the LNG itself. Somewhat like a toll
8 road where cars just go through and there's no
9 value added, so to speak, other than having the
10 facility available and providing a service.

11 What is essential is a strong credit
12 standing of the counter party giving the toll.
13 Typical counter parties have been described in
14 various other pieces of literature as either push
15 or pull. I think one of the agencies has coined
16 those terms, whether it's the LNG providing the
17 toll as the producer itself, or whether the toll
18 is being provided by the end user, perhaps a
19 utility, on the downstream side.

20 It appears that the tolling format is
21 also taking hold in Europe, although I haven't
22 been following it terribly closely, but from what
23 I understand many of the projects there are also
24 being done on a tolling basis.

25 This is just sort of a quick comment, or

1 a personal view. Tolling is really a financial
2 tool and can be applied in many formats. It
3 doesn't take away the fundamental risk allocations
4 of what is called behind the curtain.

5 The toll is really a fronting type
6 contract to obtain financing and provide lenders
7 with some type of stable cash flow stream. So you
8 do have to look behind the tolling agreement as to
9 which party is actually taking on the market risk
10 or the supply risk, because that doesn't actually
11 go away in terms of the fundamentals.

12 But from the financing party's
13 standpoint it creates an environment that can be
14 analyzed, can provide a stable cash flow stream.
15 So tolling can be used in many types of
16 arrangements as a tool.

17 An integrated approach may be described
18 as the traditional take or pay where, I think it's
19 been described before as the Asian or Japanese
20 type arrangement, slide 11, where the end user
21 provides a firm volume take and sets the economics
22 of the transaction to some extent.

23 There is some push back, on a net back
24 basis, to the producer on the price, but by and
25 large this is, I guess it's been terms the

1 directed stream before in prior presentations,
2 where you have one chain and one set of economics.

3 We expect to see variance of this, where
4 the super major producers perhaps provide
5 coordinated investments along with the chain, from
6 upstream to downstream having a series of
7 financings, or whether the major producers
8 themselves would provide tolls.

9 At the end you could have a toll in this
10 model, but what does happen in an integrated
11 approach is that the lender does have to look at
12 the entire chain to see where the risks are,
13 because there are somewhat interconnected
14 contracts which are interlocked and do rely on one
15 another.

16 A recent example was the Guongdong LNG
17 re-gas facility, where utilities and power plants
18 were off-takers, but they did have to, there were
19 ties back into the entire chain, whether it's
20 shipping as well as the producer level, and it was
21 not in my mind what we would call a stand alone
22 financing, where you can ring fence as in, let's
23 say the Sabine Pass, you ring fence the risks of
24 the low upstream as well as downstream.

25 Merchant, just a sort of a topical item,

1 is an un-contracted receiving terminal. Without
2 contracts to mitigate price and volume risks, I
3 would think that a merchant plant would be
4 difficult for the financing parties to get
5 involved in.

6 The difficulty or the challenge also is
7 that there's possibly, despite what we would call
8 first mover advantage, there is a possibility as I
9 would call the natural order, for re-gas
10 facilities to have a fair bit of spare capacity,
11 so even though the economics may look sound we do
12 have, as a lender, to look long-term, and there is
13 a possibility, particularly on the merchant model,
14 for imbalances in the system in later years.

15 But clearly there will be some attempt
16 perhaps, as the market matures, to pursue some
17 format of merchant projects. Generally what
18 could happen is that you will find shorter off day
19 contracts, so there will be some merchant exposure
20 in the back end.

21 This is similar to what we have found
22 also in the power projects in the US, that they
23 started off with long-term contracts and got
24 shorter over time, as many people talked
25 previously before.

1 Just a snapshot of perhaps what
2 financing terms would look like. If there were
3 six to eight terminals in the marketplace perhaps
4 that's anywhere from an estimated \$3 1/2 to \$5
5 millions. They say a terminal for a one BCF
6 terminal a day is anywhere from \$500 to \$800
7 million to build.

8 We think that the tolling model will be
9 the most widely used approach to obtain project
10 financing. The debt tenors, we would anticipate,
11 are in the ten to 15 years range. They are
12 usually what we would call a 20 year paydown
13 repayment schedule and a ten year antennae would
14 have a refinancing balloon at the end to
15 refinance.

16 To the extent one had a long-term
17 contract of say, 20 years, that could be easily
18 refinanced.

19 Leverage would be in the 75 to 85
20 percent range is somewhat of the target.

21 DSCR's, debt service cover ratios, are
22 approximately in the 1.5 times range, or what we
23 call coverage.

24 Banks have typically been used as the
25 initial financing format, because of the

1 construction period, in this case usually three
2 years for constructing a re-gas terminal.

3 We find that it's quite amenable to
4 refinancing with longer-term debt, whether it be
5 in the private placement market or the bond
6 market, which goes much longer than bank
7 financing.

8 The challenges have been enumerated in
9 prior presentations. This is on slide 14. Again,
10 we find that the traditional long-term contracts
11 may become shorter and more flexible. The
12 challenge for the lenders is to somehow to examine
13 and try to construct a stream of cash flows that
14 are viewed and would be analyzed as somewhat
15 stable and manageable in the analysis over the
16 term of the debt.

17 My observation is that early project
18 financing structures tend to be over-engineered.
19 We usually have very well structured deals, and
20 over time we find that we, as an industry we're
21 also quite competitive, we tend to push the
22 boundaries in later years, as the industry
23 matures. So time will tell.

24 Conclusions, just to wrap up. Certainly
25 there is a window of opportunity for additional

1 LNG in the US today. I think the lender and
2 financing markets are quite eager to participate
3 in this sector. This is quite good timing. To a
4 large degree there is a dearth of good projects,
5 very little deal flow so far. I think Dino will
6 get into that.

7 And our sort of guess is that we'll see
8 more involvement in the re-gas side in fact, or in
9 the entire LNG chain, by the major producers, who
10 would have the resources and also the wherewithal
11 to provide whatever contractual arrangements are
12 needed for the financing market. Thank you.

13 MR. MAUL: Do you guys want to take
14 questions at the very end of the panel? Because
15 I've got a lot of question, and maybe we could
16 bounce them back and forth rather than
17 individually, so --.

18 Okay, our next speaker up is Paul
19 Clifford from Standard Charter Bank.

20 MR. CLIFFORD: Good afternoon. My name
21 is Paul Clifford, I'm a Senior Vice President in
22 the project finance group in New York at Standard
23 Charter Bank. Thank you again for the opportunity
24 to speak to you today and to address the LNG
25 access issues in California and specifically the

1 finance-related issues.

2 The first half of my presentation is
3 probably trodding on, well trodden ground already,
4 in terms of the market background, supply demand
5 dynamics and so forth, so I'll run through that
6 very quickly and try to zero in on the financing
7 discussion and perspectives from my institution's
8 experience, which has primarily been on the LNG
9 export side and on ship financing.

10 But I did want to sort of isolate one
11 specific issue, which is a constant topic of
12 conversation, which is whether or not LNG is a
13 globally traded, fungible commodity. I'd like to
14 try and address that because it does go to the
15 heart also of the financing flexibility within
16 these multi-faceted projects.

17 Again, I don't want to dwell on this,
18 but for those of you who don't know Standard
19 Charter Bank, we're a global international bank,
20 duly listed in London and Hong Kong but with a
21 substantial geographic footprint in Asia, Africa
22 and the Middle East.

23 And because of that sort of market
24 presence we've been heavily involved historically
25 on the major Asian and Middle Eastern LNG export

1 projects, and also West African LNG export
2 projects as well.

3 Again, just some credentials in terms of
4 the recent projects we've been involved in.
5 Probably the most significant one that's closed is
6 the Qatar class two LNG project, sponsored by QP,
7 Qatar Petroleum, and Exxon Mobile, which closed
8 last year.

9 And what's interesting about this
10 transaction, I didn't go into the point Richard
11 made about the current finance liquidity in the
12 market given this rather benign credit cycle we've
13 been undergoing, is the fact that this was
14 initially supposed to be a single train financing.

15 The market response was so overwhelming
16 that the financing was doubled up and it actually
17 went up and raised financing for the second train
18 at the same time, and ended up raising \$8 billion
19 of financing for this two train project.

20 Just a little history on LNG, you've
21 probably been through this before already. I
22 think what's probably relevant about LNG in terms
23 is that even though it's been growing as a gas
24 supply source, around 15 percent a year since the
25 1970's, it's still only represents probably about

1 five percent of the tradeable global gas sector.

2 So it's still a relatively small
3 although fast growing component of the global gas
4 industry.

5 And just on supply, historical suppliers
6 have been largely Indonesia, Malaysia, Australia
7 and Algeria. The new sort of frontier suppliers
8 in recent times have been largely Qatar, Middle
9 Eastern suppliers, and Oman and Nigeria and West
10 Africa.

11 Qatar is an interesting case. They've
12 got the largest non-associated gas field, the
13 north field, which is about 900 TCF of gas and no
14 end markets domestically. They're planning to
15 invest somewhere in the region of \$25 billion
16 between now and 2010 in LNG-related infrastructure
17 investments.

18 They've gone from a situation in 1996
19 where they were a non-entity in the LNG sector to
20 a point where they're currently exporting 17
21 million tons of LNG per year.

22 One demand side, historically the demand
23 energy markets have been dominated by three
24 countries, Japan, Korea and Taiwan, which probably
25 represents 70-75 percent of the global LNG demand

1 picture.

2 Obviously the US and Europe are the
3 fastest growing demand country regions for LNG
4 looking forward. I'll just skip over some of
5 these slides.

6 This slide here just puts some
7 perspective on where LNG sits. If you look at the
8 bar to the furthest right, the US LNG represents
9 roughly about two percent of the US natural gas
10 supply. If you compare that with Japan, Korea and
11 Taiwan, where it's 80-90 percent, it's a baseload
12 fuel supply primarily for electricity generation.

13 It doesn't have any competition in those
14 countries with domestic gas sources or with pipe
15 gas, and the cost can be absorbed into the rate
16 base in those countries quite easily. It's
17 obviously a much less complicated situation than
18 what you have in the US.

19 Similarly, on the question of LNG
20 trading, short-term cargos of trading around LNG,
21 it's still relatively small. This chart's a bit
22 dated, but it's still in the region of 8 to 10
23 percent of total LNG sales are short-term sales
24 basically.

25 And that's primarily in the US. the US

1 represents somewhere in the region of 30 to 50
2 percent of short-term cargo trades, and it's
3 primarily arbitraging around shipping logistics,
4 swapping cargos. It's not really true sort of
5 merchant trading in terms of LNG.

6 The other point about the trading, the
7 sort of peripheral trading of LNG, it's primarily
8 swing capacity on the larger LNG projects, like
9 out at Qatar and Nigeria LNG, where they've got
10 the fourth, fifth and sixth trains and they've
11 basically excess capacity to trade around.

12 And you've got sponsors like BG and
13 Shell that have the trading flexibility, the
14 shipping flexibility, and increasingly the re-gas
15 terminally flexibility in Europe and the US to
16 basically trade cargos options to different
17 markets.

18 Within that 8 percent, the split between
19 the Atlantic Basin and the Pacific Basin is, you
20 know, 21 percent and two percent. The Pacific
21 Basin, again, LNG has traditionally been a long-
22 term contracted supply, baseload supply, whereas
23 the Atlantic Basin tends to be basically a swing
24 commodity for pipe gas in Europe and the US on a
25 short-term spot basis.

1 Again, this chart is just illustrative
2 in terms of price signals and the response of LNG
3 to price signals. This is, the red line is the
4 Henry Hub gas price in late 2002 into early 2003,
5 and the bar charts represent LNG shipments into
6 the US.

7 What's sort of illustrative about this,
8 in that particular winter season Korea had a
9 particularly heightened demand for gas, winter
10 demand, and there was a number of nuclear
11 shutdowns in Japan. So both Korea and Japan had
12 already locked up any excess or spare cargo
13 capacity for LNG going into that winter season.

14 So even though prices spiked in the US
15 there wasn't a noticeable incremental increase in
16 LNG shipments into the US, which again, I think it
17 illustrates the point that there is limited
18 flexibility to trade around LNG given that these
19 are typically dedicated projects, dedicated in
20 terms of destination, in terms of supply,
21 particularly Pacific LNG cargos have specific gas
22 specifications, the tankers are specific sizes.

23 So it's not optional to be able to trade
24 or move different cargos from one place to another
25 that easily at short notice in response to price

1 signals.

2 Richard touched on a number of these
3 issues, just in terms of what's happening in the
4 finance market particularly with LNG,
5 traditionally the LNG export projects that have
6 been financed out of the Middle East, specifically
7 in Asia, have basically been long-term sale
8 purchase agreements with large government owned
9 utilities, typically in Japan and Korea, that have
10 strong credit ratings, typically single A.

11 It's really, they've really been more
12 government to government projects or state to
13 state projects, particularly coming out of the
14 Middle East into Japan, Taiwan and Korea. And
15 you've got long-term contracts with volume and
16 price risk assumed by the buyer.

17 Typically these have been structured
18 where the upstream liquefaction, gas production,
19 gas gathering, and the ships have been financed on
20 an integrated basis. The re-gas terminals in
21 Japan and Taiwan have been typically financed by
22 the buyer, by the utility, domestically, so
23 they've not been project financed on a stand alone
24 basis.

25 What's happened since then is there's

1 been an evolution in terms of the players in the
2 market and increasingly the super majors and the
3 gas traders have started to build businesses
4 around these projects. So the super majors have
5 multiple liquefaction capacity positions.

6 They've got capacity positions on re-gas
7 in Europe and the US, and they're increasingly
8 ordering ships on a speculative basis to provide
9 that sort of trading flexibility or optional
10 flexibility to trade LNG.

11 And what's happening with the contract
12 structure is there's been a loosening of the
13 volume and price terms that have traditionally
14 been in place. We're seeing shorter term
15 contracts and optional cargo rights. The issue of
16 destination closes as well. Traditionally LNG has
17 been structured on the contracts where you can
18 only deliver into a specific destination.

19 That is changing also to again provide
20 some trading flexibility. We're seeing in this
21 most recent wave of LNG projects out in the Middle
22 East contract structures whereby you've got
23 basically -- not all state contracts, but you've
24 got sort of gas marketing contracts with super
25 majors with volume offtake but tied to price

1 index, whether that's Henry Hub in the US or a UK
2 gas price.

3 And with destination flexibility as
4 well, to deliver cargo to multiple destinations.
5 And typically what's happened in those situations
6 is that any upside from that destination
7 optionality has been shared between the buyer and
8 seller of the LNG.

9 The other structural aspect in terms of
10 gas price risk is that some of these contracts
11 have been structured with a floor price to protect
12 the sellers and lenders on the upstream side and
13 then potentially the unlimited upside for the
14 buyer.

15 Again, from a lender's perspective --
16 and Richard touched on this point -- even looking
17 at it as straightforward tolling, re-gas terminal
18 financing where you've got long-term use
19 agreements with credit worthy entities, which are
20 basically capacity payments payable on an
21 availability basis regardless of whether LNG is
22 tolled through the gas terminal.

23 Even in that sort of simple structure
24 where you're looking at, from a financial risk
25 point of view, a single credit worthy entity,

1 you're not really concerned about LNG supply and
2 shipping and re-gas marketing.

3 But lenders are still going to want to
4 look through those terminal use agreement
5 contracts to be comfortable that the project makes
6 commercial sense, because there's a very good
7 chance if this is not a competitive project in
8 terms of re-gas cost, relative to other re-gas
9 terminals, and that re-gas terminal is not being
10 optimally utilized, there's a very good chance
11 that that contract is going to be renegotiated.

12 If it doesn't make commercial sense for
13 all the parties all the way up the chain. So if
14 the net back to the gas exporters starts to get
15 squeezed because gas prices started to drop in the
16 US, and typically on a net back basis the ships
17 and the re-gas terminals are paid first, and then
18 whatever's left over goes back to the liquefaction
19 and gas production.

20 And if that margin starts to get
21 squeezed and it doesn't make economic sense for
22 the exporting countries to supply LNG, there's a
23 very good chance those contracts will be
24 renegotiated. And it has a direct knock down
25 effect in terms of lenders at the re-gas terminal.

1 So I think that's an important point to make.

2 Again, this is a similar chart to the
3 one Richard displayed. It just highlights the
4 interdependence and the interconnectivity between
5 the various value chain components of LNG
6 projects. There's a good degree of
7 interdependency.

8 If we're looking at an integrated
9 project, where traditionally from production down
10 to shipping, really liquefaction and shipping have
11 been financed out of the Middle East or out of
12 West Africa on an integrated basis, lenders at
13 each point of the chain, those different lenders,
14 are going to be concerned about what rights they
15 have to remedy defaults upstream at the
16 liquefaction facility, for example.

17 What step-in rights they would have if
18 there is a supply interruption. there are things
19 like force majeure provisions, which is if there's
20 a supply interruption on the upstream side what
21 rights do you have, what obligations do you have
22 at the re-gas terminal to continue supplying gas
23 to your off-takers.

24 So those are the issues that add to the
25 complexity of these types of projects and the

1 inherent interdependency that exists at various
2 points in the chain.

3 The other point that's sort of relevant
4 again is, underpinning this entire value change
5 and, you know, sort of rougher at a time, is to
6 deliver one BCF of additional gas, has a rough
7 value chain cost of around \$6 billion.

8 And, as Richard mentioned, the re-gas
9 terminal is probably the cheapest capital cost
10 components of that value chain. The most
11 expensive is the liquefaction, traditionally been
12 the liquefaction, and the ships.

13 But you've got one single source of cash
14 flow underpinning repayment of the investment
15 costs and whatever financing is raised at various
16 points in that chain, which is the ultimate gas
17 sales.

18 And typically the way these prices have
19 been structured, is that basically a cash flow
20 waterfall, where the cash is segregated into an
21 account basically, and then there has to be an
22 agreement across the entire chain as to how that
23 cash gets prioritized, who gets paid first.

24 So on these projects it's not unusual
25 for the re-gas terminal and the ships, which are

1 typically viewed as operating expenses, to be paid
2 first, and then any net back or residual cash
3 would then be applied to the upstream lenders.
4 But there's various different ways of structuring
5 this.

6 But the important point is that there's
7 one single source of cash flow underpinning the
8 repayment of the entire value chain of capital
9 investment costs when you're looking at integrated
10 projects.

11 I want to point out, in terms of the re-
12 gas terminals, in terms of the models that we've
13 seen in the US, you know, there's just two models,
14 one is the Chenier model, where they've suggested
15 permitted and developed a number of re-gas
16 terminals and sold capacity rights on a number of
17 these terminals to typically major integrated
18 super majors.

19 The second model is the super majors
20 themselves, either acquiring or building capacity
21 in the US. To date that's traditionally been done
22 on a balance sheet on a corporate basis, again
23 because it's not the most significant capital cost
24 on the value chain.

25 And for the super majors, they are

1 looking at this in terms of a business strategy,
2 to build a business around LNG. So there's a
3 strong likelihood that there probably will be
4 excess re-gas terminal capacity to provide the
5 trading flexibility that these companies need.

6 And for that reason a lot of these
7 terminals are being developed by these super
8 majors are probably largely going to be financed
9 on balance sheet.

10 There are other strategies. Semptra has
11 an interesting strategy, they're developing three
12 re-gas terminals in North America and they have
13 raised initial financing for these terminals on
14 balance sheet with potentially a strategy to
15 refinance these on a single asset basis or on a
16 portfolio basis or on a non-recourse basis. So
17 there's various financing strategies we've seen in
18 the US.

19 Richard touched on these various
20 financing contract models. Merchant, which is at
21 one extreme, where you've got price and volume
22 risk. And arguably some of the latest batch of
23 LNG financing is coming out of the Middle East and
24 West Africa have some elements of volume and price
25 risk, with price tied to some market index in the

1 US.

2 But these types of projects need to be
3 cost competitive, I mean, lenders need to be
4 comfortable that the break even price to cover
5 debt services is very low gas price.

6 Partial contracts, which is probably the
7 models that we're currently seeing coming out of
8 the Middle East and Africa, and then tolling,
9 which is at the other extreme, where you've got
10 fixed capacity reservation payments regardless of
11 actual terminal usage.

12 And they can be either push or pull type
13 contracts, where in the case of push you've got,
14 by way of example, somebody like Total or Chevron
15 Texaco acquiring capacity terminal rights in
16 Chenier's Sabine Pass project for example.

17 And on the pull side then you've got
18 examples where you've got some industrials like
19 Dow Chemical buying half a BCF a day of terminal
20 rights on another of Chenier's Freeport terminal
21 projects.

22 In conclusion, our view is that there is
23 a tremendous amount of liquidity and appetite and
24 interest in financing LNG projects. There are
25 various players in various points in the value

1 chain, from upstream national oil companies, the
2 exporting companies with the gas reserves to the
3 super majors trying to build trading businesses
4 around these assets trying to get multiple
5 liquefaction shipping and re-gas terminal
6 capacity, basically.

7 Again, lenders are still going to focus
8 on the fundamental commercial rationale of the
9 project, even if you're just looking at a re-gas
10 terminal in isolation. We'd want to know that the
11 terminal is cost competitive.

12 And that is one potential issue visavis
13 the scale of projects that are being, of re-gas
14 terminals that are being developed. Particularly
15 around the Gulf Coast they've tended to be quite
16 large, in the 1 1/2 to 2 1/2 BCF range.

17 Because of the scale of economies in
18 this type of business those terminals, the larger
19 the are typically the more cost-effective and the
20 more economic they're going to be. And then if
21 you get into a situation where you've got an over
22 build in the US then you are going to be paying
23 the relative cost of competitiveness of the
24 respective terminals, and the larger ones are
25 typically going to have better cost economics.

1 Again, it's, on the re-gas side lenders
2 are going to want to be comfortable with the
3 supply arrangements and everything else further up
4 the LNG value chain. And our view, as Richard
5 mentioned, is that there will be multiple
6 financing opportunities in the re-gas terminal
7 market in the US and the structures that will be
8 applied will largely be dependent on the types of
9 players that are developing these projects and
10 what their business strategies are in the US.
11 Thank you.

12 MR. MAUL: Thank you, Paul, that was
13 very informative. And we've got some questions,
14 and we'll hold them until Dino has a chance to
15 tell us a little bit.

16 MR BARAJAS: I'll run through my
17 presentation quickly, given the time constraints.

18 Just by way of background, I'm an
19 attorney specializing in project finance and
20 energy infrastructure development. I've worked on
21 projects throughout the United States, Mexico and
22 numerous countries throughout Latin America and
23 the Middle East.

24 Right now the lending market is
25 extremely hungry for projects within the United

1 States. The reason for that is, at least in the
2 energy sector, there isn't a lot of new greenfield
3 development taking place in the United States for
4 a number of reasons, mainly the overbuild scenario
5 in the power sector.

6 The important thing I guess to know from
7 the California perspective is that California is
8 competing for projects, and its competing for
9 projects with other locations such as Texas,
10 Mexico and the eastern seaboard. So at
11 least in terms of what projects will be able to
12 come to market, there will be numerous factors.

13 One, location to the desired market.
14 California is probably one of the more desired
15 markets in the entire United States.

16 Second, who comes to market first.
17 Who's able to tie up the dollars coming out of the
18 lending community, and who's able to structure
19 their project correctly up front to avoid any
20 hiccups throughout development and financing.

21 Structuring is key. Addressing the
22 issues up front is paramount to having a
23 successful project. What we've seen in the market
24 is that a number of projects have been proposed,
25 as we saw in Richard's slide. We saw an excess of

1 50 projects that have been proposed throughout
2 North America.

3 Out of those projects everyone
4 realistically believes that perhaps no more than 8
5 will be developed. what's going to separate those
6 that do come to market and those that go by the
7 wayside?

8 Well, in some cases, having kind of a
9 window to the lending market. And that may hiring
10 a financial adviser to point out what issues
11 lenders are looking at in terms of financible
12 projects, given the number of projects that are
13 being proposed.

14 Lenders right now are being bombarded
15 with numerous proposals of projects that may be
16 developed given the right market circumstances.
17 But at the end of the day the projects that will
18 likely be developed are the projects that are
19 being supported by sponsors with a strong balance
20 sheet, as Paul was mentioning.

21 The conventional strategy has been, and
22 especially given that we have the tail here, the
23 back of the dog, because it's such a small portion
24 of the entire value chain most of the sponsors
25 with the strong balance sheets will go ahead and

1 finance their projects on their balance sheet.

2 Once they're able to lock up the entire
3 value chain and bring their profit to market
4 they'll then be able to project finance the re-gas
5 facility as a stand alone project.

6 In trying to prepare for this
7 presentation David Maul asked if, at least from my
8 point of view, whether I thought a closed access
9 or an open access model would be preferable for
10 California, at least from my point of view.

11 Initially to try to promote a investor
12 friendly environment, to try to make sure that
13 projects are sited in California so that
14 California consumers have some degree of control
15 over their own gas resources, I would suggest you
16 utilizing the closed access model.

17 And then, after a certain number of
18 years, to the extent that there is excess capacity
19 still available in a specific gas terminal, to
20 then mandate open access for that portion.

21 That way, at least from a developer
22 point of view, after going through the brain
23 damage of siting, permitting, dealing with
24 environmental issues, you then get the benefit of
25 your bargain as opposed to trying to fend off

1 other competitors that may hold back, let you go
2 ahead and build your terminal, and then come and
3 compete for the resource that you've developed.

4 It would also promote full utilization
5 of whatever terminals are developed and hopefully
6 finance.

7 One other thing to note is that, given
8 that there are other competing regions for
9 projects, to the extent that California doesn't
10 promote an investment friendly environment, what
11 may end up happening is, at least what I've seen
12 in the market, given that I do a lot of work in
13 Mexico, is that projects and the developers
14 building those projects, are looking to Baja,
15 they're looking to other areas in Mexico as their
16 entry point into the united States.

17 There is gas demand in Mexico. There's
18 been a huge development of gas-fired power plants
19 along the US-Mexican border, which would then
20 support a number of re-gas facilities as anchored
21 tenants, with the long-term view then of using
22 those re-gas facilities as the entry point into
23 the United States.

24 Do we have enough time here for
25 questions? I'll stop it there.

1 MR. MAUL: Thank you, Dana. And I'm
2 just glad you pointed out, I don't have
3 responsibility for siting, but my colleagues who
4 are in the State Lands Commission, who are in the
5 audience, do have responsibility for siting
6 because of the difficulties they're facing.

7 But, anyway, questions for the panel?

8 COMMISSIONER DESMOND: I do have a few
9 questions. I guess I'll start with one from Paul.
10 There was an example on your conclusion slide
11 where you had indicated concerns about the
12 potential for lenders of the production or
13 liquefaction or ships to have or hold a terminal
14 project for ransom.

15 And I guess the question is can you give
16 examples of where that has happened so far,
17 anywhere? This was the fourth bullet down.

18 MR. CLIFFORD: As I mentioned in the
19 presentation, there hasn't been too many examples
20 historically of a terminal that's been financed on
21 a stand alone basis, they've typically been
22 basically financed by the utilities in the early
23 phase of projects, export projects going to Japan
24 or Korea or Taiwan, Korea gas or Tokyo Electric,
25 the major oil tankers in these projects have

1 typically balance sheet financed these themselves,
2 so it's not been a specific issue.

3 But obviously if you're right at the end
4 of the value, the supply value chain you obviously
5 just need to ensure, if the terminals are financed
6 on an integrated project basis, that you have the
7 right contractual structure, you've got
8 coordination agreements across the entire value
9 chain --.

10 If you've got different lenders at the
11 terminal then you do at the liquefaction or the
12 shipping that you've got the appropriate rights to
13 remedy defaults, say if there is a default by the
14 shipper and the lenders to the ships were going to
15 enforce their security and take security over the
16 ships, you'd want to preserve certain rights to
17 remedy that default, to protect the supply chain
18 essentially, so that's kind of the issue that's
19 going there.

20 COMMISSIONER DESMOND: And a quick
21 followup for Dino, and that was regarding your
22 view of closed access versus open. And
23 essentially I thought I heard you say was you were
24 talking about a delayed opening. What is the
25 period of time in which you think it might be

1 appropriate, is it tied to the debt tenor of say
2 ten years, or are you talking about 20 years based
3 on the amortization, or some period of time before
4 you think that would be worth visiting?

5 MR BARAJAS: I think a fairly short
6 period of time would be adequate, perhaps three
7 years. Because at that point if the developer
8 hasn't tied up his capacity it probably would be
9 in the public interest to then try to utilize that
10 resource to its most efficient usage.

11 And part of the reason for that, rather
12 than just trying to promote an investor friendly
13 environment is that, at least from the lending
14 community's point of view, but trying to finance
15 one of these projects what a lender's looking to
16 do is, for one, are the contracts structured
17 properly?

18 Is the value chain and the
19 interdependence amongst the contracts done in such
20 a way that it's going to promote an efficient
21 project, and the project economics are going to be
22 protected.

23 But just from the point of view of
24 project finance, the re-gas facility. I mean,
25 there a lender may want to look at the credit

1 rating of a single borrower of the sponsor, as
2 opposed to having numerous contracts with various
3 users with different credit ratings. That's just
4 going to complicate trying to get a financing
5 done.

6 And as Rich mentioned in his
7 presentation, trying to harmonize all those
8 contracts with each other is going to be a
9 difficult task, so perhaps for the first projects
10 that are built you're going to be able to
11 facilitate development and financing by utilizing
12 a closed model, and perhaps at some point in time,
13 depending on what the market economics look like,
14 you may be able to modify that model.

15 MR. CLIFFORD: I wanted to make just a
16 very quick add-on point on the open access/closed
17 access issue, it's not just the private sector
18 super major developers, it's the national oil
19 companies in Qatar and Nigeria that have raised
20 this issue about security of access to end
21 markets.

22 And we're aware of situations where they
23 have been pressing their joint venture partners to
24 firm up their re-gas marketing strategies, and
25 demonstrate that they have market access. At

1 least certainly on the initial greenfield
2 investment before they sign off on a final
3 investment decision that their gas reserves are
4 going to go to a particular market.

5 So it's an issue also for national oil
6 companies. And I think there have been examples
7 where companies that have been independently
8 developing their own re-gas capacity in the US
9 have been pressed to secure, accelerate that
10 process by buying into gas capacity terminal
11 rights, in the case of Sabine, for example.

12 It's a relevant issue offsetting for the
13 national oil companies, and they are very focused
14 on that as well.

15 MR. MORSE: We hear there's over 50
16 projects proposed in North America. Some of the
17 panel said that maybe six would be needed for
18 closing the gap, maybe eight total so that there's
19 a little bit extra capacity.

20 When project number nine comes around
21 and eight are already financed, will the lending
22 community be the discipline that will stop that
23 future project from going forward?

24 MR. CHINLOY: That's a good question. I
25 think we've been there, done that before. To a

1 certain extent one would think that perhaps the
2 sponsors would be disciplined themselves.

3 Lenders, I must profess, don't always
4 have the viewpoint from 35,000 feet up to fully
5 understand some of the implications of whether
6 you've overbuilt or not. There's always a very
7 good story and some degree, if that ninth project
8 comes along and let's say it's well sewn up, it
9 could displace an earlier project that is on
10 contract.

11 So it would make eminent sense for the
12 lender to finance or support his client sponsor on
13 that ninth project. But if it is self-evident
14 that that ninth project is the superfluous
15 project, clearly it won't stack up to the
16 financing scrutiny.

17 MR. MORSE: I have one other question.
18 You talk about the desirability from the
19 investment community of closed access as opposed
20 to open access. How about something in between
21 where the project sponsor has the top priority,
22 and people sometimes use the phrase "managed
23 access," but they completely control the use if
24 they want to use it, but if they're not using it
25 then someone else could step in for third party

1 access.

2 That somewhere in between, would that be
3 thought of differently than open access to the
4 investment community?

5 MR. CLIFFORD: Yeah, it's a fair point.

6 And I think that market model is, I think Mexico
7 is looking at something not dissimilar in terms of
8 having a base capacity reserve, maybe it's the
9 initial train. These are typically not single
10 train investments, these are usually initial spare
11 capacity to provide for an expansion.

12 But I think that's a reasonable
13 scenario. Again, it depends on the overall
14 economics of the project and whether that base
15 reserve capacity is sufficient to support the
16 financing, and then it will come down to a
17 question of well, how much debt can you raise
18 against that contractual structure?

19 For example, Sabine pass, you were
20 getting leverage in the 75-80 percent range, maybe
21 in that kind of modified scenario you may be
22 looking at, it might be a tradeoff between
23 leverage and flexibility.

24 But it'll be a question, I think it's as
25 much a commercial decision upstream with the

1 project developers and national oil companies as
2 to whether the value chain economics are
3 sufficient relative to other options they might
4 have as to where that gas supply might go, you
5 know.

6 MS. SCHWEBS: I just had a question
7 about Sabine Pass. It's my understanding that the
8 bankers were both involved with that particular
9 financing. Can you tell us a little bit more
10 about how that worked, and that is an open access
11 facility.

12 I would like to know if you think that
13 financing of that kind of facility in the Pacific
14 would be possible. Obviously there are great
15 differences between the Gulf market and the
16 Pacific market.

17 MR. CLIFFORD: What can we say about
18 Sabine from what's published in the press. Sabine
19 would be the classic project financing established
20 with the financing underpinning being the tolling
21 contract.

22 There were two major ones, which gave
23 the financial standing to provide project
24 financing. I think it went about ten years or so
25 with a balloon on the end. Something like that

1 could be put together almost anywhere in the US.

2 As we know, Texas, as has also been in
3 the power sector, Texas is quite friendly to new
4 development and it just occurred there first. No
5 reason why it couldn't occur in California if a
6 project passed scrutiny in that particular state
7 or even the east coast.

8 MR. MAUL: All right. Dino, you had --?

9 MR. BARAJAS: Just one last quick comment
10 about the overbill scenario, in terms of the ninth
11 terminal if there's only room for eight. At least
12 looking at recent history and the overbuild
13 scenario in the power sector, we can run into a
14 situation where we may have more projects that get
15 developed, mainly because everyone's chasing deals,
16 trying to put in their capacity.

17 They have a great story at the time, and
18 for one reason or another it may never come to
19 pass. But at the end of the day, if we do have an
20 overbuilt scenario, we have more receiving
21 terminals than we actually need and they are
22 financed and developed, then at that point, I mean
23 the ultimate group that ends up benefitting is
24 going to be the end user, so the public.

25 Because at the end of the day debt still

1 needs to be paid. the project developer is
2 incentivised to try to maintain its equity
3 position so they're going to do whatever they need
4 to do in order to meet the debt service, and
5 prices will come down, at least for that short
6 period of time that you are in an overbuild
7 scenario.

8 So it may not be the best thing for the
9 market, including the lending market, but it may
10 not be the worst thing, at least for the public as
11 a whole.

12 MR. MAUL: Okay, Dino, Paul and Richard,
13 thank you very much for coming today, and flying
14 out here. We appreciate your insights on the
15 markets here and the financial aspects. If you
16 can think of any comments you'd like to make later
17 please feel free to let us know.

18 Good. Okay, thank you very much. Next
19 we're going to hear the view from the customers,
20 or the potential customers, of natural gas via
21 LNG. We'd like to have Jim harrigan from SoCal
22 Gas, Bob Howard from PG&E. I understand Marcel is
23 not here with us yet, so if Brad Barnds from
24 Calpine could join us up here, we'll take a quick
25 break while we swap out computers here, and go on

1 to the next session.

2 (Off the record.)

3 MR. MAUL: A very quick swapout of
4 panels here, you guys are efficient, I tell ya.
5 You guys are anxious. Well, we have with us this
6 afternoon two quick panels from a customer
7 perspective, and we'll start off with Jim
8 Harrigan, Vice President for Southern California
9 Gas Company. Jim, you are the gas buyer I guess
10 for the company.

11 And since you are a gas buyer you are a
12 potential customer of LNG. Obviously you don't
13 buy LNG right now, but you're thinking about it,
14 so we look forward to your thoughts on the access
15 issue, how to make it acceptable from the gas
16 buyers perspective.

17 MR. HARRIGAN: Great. Appreciate the
18 invitation to be here. It's a great forum, and we
19 probably have more questions than answers about
20 LNG. We are the tail, as I keep being reminded
21 here.

22 I wanted to just go over a couple of
23 points here, and just try to orient folks to our
24 situation, and then go into some of the thinking
25 that we've had about LNG. We buy gas for our

1 corporate folio, I'm the vice President for Gas
2 Acquisition, and we certainly are interested in
3 taking advantage of LNG.

4 We know there's numerous plants on the
5 drawing board, including one on the West Coast
6 that is an affiliate of ours. So we are
7 interested in taking this to make it a component
8 of our portfolio, and including consideration of
9 our affiliate in due course.

10 What I want to do is go through a
11 presentation outline here. I want to do an
12 overview of the core customer portfolio. I want
13 to talk about the recent developments that we've
14 had in our interstate capacity portfolio, go over
15 the regulatory environment with respect to LNG
16 contracting, and talk about SoCal Gas's core
17 customer objectives with respect to interstate
18 capacity and LNG contracting.

19 Then I want to spend a couple of minutes
20 going over a couple of the issues that we feel
21 like need to be resolved through the PUC, SoCal
22 Gas, and our suppliers, with respect to LNG.

23 John Daggs this morning went over the
24 SoCal Gas system, and the core portfolio of the
25 system represents about 40 percent of our total

1 system throughput, or about one BCF a day. That
2 serves five million plus residential and small
3 commercial meters in Southern California.

4 For our winter peaking system our
5 average load is, as I've said, is about one BCF
6 per day. We have about 1.3 BCF per day in the
7 winter, and the injection season load is about .7
8 BCF.

9 The assets we have to serve that load
10 include interstate capacity rights of about a BCF
11 per day. We have storage capacity allocated to
12 the core of about 70 BCF, and injection capacity
13 of about a third of a BCF a day, and withdrawal
14 capacity of about 1.9 BCF. And we utilize the
15 typical transactions in the industry to optimize
16 that portfolio.

17 Most of you are probably pretty familiar
18 with that situation, it's a very well-known
19 component of SoCal Gas system, but that's the
20 basics.

21 Recently we had contracts on
22 Transwestern pipeline and El Paso pipeline that
23 were expiring, and we have restructured those
24 contracts for the core.

25 When the old contracts expire we will

1 have holdings on the interstate capacity to serve
2 our core load of .75 BCF per day on El Paso.
3 Transwestern will have about .2 BCF per day, and
4 Kern out of the Rockies will have about 50 a day
5 of capacity. That will total about one BCF, which
6 matches our core load.

7 These are staggered contracts, and when
8 the El Paso and TW contracts step down we have
9 rights of first refusal on those contracts, so we
10 can continue those contracts should we need
11 interstate capacity rather than an alternate
12 source.

13 Most of the receipt points that we have
14 on interstate capacity are out of the San Juan
15 Basin in New Mexico, but we have alternate access
16 out of the Permian Basin, and we have about 40
17 percent of the delivery points into our system on
18 the southern system at Ehrenberg, and Ehrenberg
19 was indicated on John Dagg's slides.

20 The contracts that we have, the renewed
21 contracts, expire over the next three to five
22 years, and all the information on that is
23 available on the PUC website, for those of you
24 that are not familiar with that contract.

25 The PUC guidance on interstate capacity

1 and LNG contracting is contained in Decision
2 0409022, and I'll just briefly go over a couple of
3 provisions on that.

4 The core must hold capacity equal to
5 between 100 percent and 120 percent of its annual
6 core load. That is, we want to make sure that we
7 maintain capacity adequate to serve the core load
8 without border purchases.

9 We must hold at least 90 percent of our
10 annual average capacity during the injection
11 season, and any sort of capacity additions
12 requiring consultation with the ORA and TURN, and
13 must be approved by the full Commission in either
14 an application, expedited advice letter, or a
15 letter from the director of energy division,
16 depending on the size and terms of those
17 contracts.

18 So we have the ability to adjust our
19 asset based on our needs and the core's needs.

20 Core LNG contracts are treated as
21 interstate capacity, that is that they would apply
22 toward the 100 or 120 percent of requirement the
23 PUC has laid out, and require an application for
24 approval. So, for us to be able to contract for
25 LNG we need to go through a full application

1 process with the PUC.

2 Now let me go over the third point in my
3 presentation, and that is SoCal Gas's objectives
4 with respect to LNG in the core portfolio. I've
5 got four points here that I think pretty much sum
6 it up.

7 We want to first ensure that the
8 diversity offered by LNG translates into
9 reliability and low cost gas.

10 We want to utilize the guidance and
11 experience in the recent Decision 0409022 in
12 gaining approval by the PUC in a timely manner.
13 If we decide on LNG or decide to pass on LNG we
14 need to make adjustments in our interstate
15 capacity, and we think we need to move the process
16 along.

17 We want to limit ratepayer and
18 shareholder risk associated with LNG.

19 And we designed our current portfolio to
20 allow for LNG but not be dependent on LNG. We
21 have rights of first refusal on the interstate
22 capacity contracts and mechanisms to supplement
23 our interstate capacity should LNG not arrive.

24 Next I'm going to go through some
25 comments that have not -- and they're more

1 questions on LNG contracting that they are
2 answers. And I've got basically these issues on
3 contracting that need to be resolved through a
4 regulatory contracting process with the PUC, SoCal
5 Gas, and its suppliers.

6 The first list of issues I have is
7 reliability issues. That's, after all, our number
8 one concern. Question: are we contracting for re-
9 gasified LNG or just gas? Do we expect whatever
10 gas that we buy at whatever location to actually
11 be LNG?

12 And I think the question there is for a
13 true interstate, a true substitute for interstate
14 capacity to deliver gas, does that mean it has to
15 be LNG. I'm not answering that question, I'm
16 asking it.

17 How far upstream do you go? Do you go
18 to the SoCal Gas city gate, to the SoCal Gas
19 border, to the re-gas terminals, to the ships, to
20 the reserves? And I think I can answer that one.
21 I would say SoCal Gas border or city gate.

22 If you decide that you are going to
23 contract exclusively for LNG how do you verify
24 that it was in fact LNG? If it's LNG must there
25 be uniform daily flows like there are on

1 pipelines? And if there is a substitution for
2 non-LNG should there be some sort of economic
3 consequence for either makeup gas or fluctuation
4 from uniform daily quantities?

5 That's all I can think about on
6 reliability issues, but when we get into
7 discussions with the ORA and TURN and others I
8 think we're going to come up with more issues that
9 need to be discussed. So that's a partial list,
10 not complete.

11 Next is pricing. What's the appropriate
12 pricing mechanism? Is it a city gate monthly
13 index? Is it a border monthly index? Is it a
14 Basin monthly index? Is it a market basket of
15 index? Or is is some other pricing mechanism?
16 And I don't know the answer to that, but those are
17 some of the issues that we're going to be
18 tackling.

19 What about force majeure provisions? Is
20 diversion of ships a force majeure? We think not.
21 What about interruptions in the country of supply?
22 Is that a force majeure provision? How should
23 that be handled contractually?

24 Diversity of supply to LNG. What's the
25 appropriate amount? How much do we rely on LNG?

1 Is it 30 percent, 20 percent, 10 percent? I can
2 guarantee you it's not 100 percent, but I think
3 some portion in the core portfolio is very
4 appropriate.

5 How many suppliers should supply LNG,
6 and should there be a diversity of start dates so
7 that we get the broadest possible opportunities
8 for inclusion in a contracting process?

9 If we contract for LNG and the supply
10 chain is somehow interrupted or plants are not
11 built or whatever, should there be economic
12 consequences associated with that, and how should
13 they be covered contractually?

14 Those are a very partial list of the
15 issues we have. All of those, when we go through
16 them internally we conclude that yeah, those are
17 issues, but they are nothing that can't be dealt
18 with, and the benefits of LNG certainly are
19 something that we want to consider.

20 Let me talk now, on the last point, and
21 that's the contracting process. And that's
22 through PUC, SoCal Gas, and suppliers.

23 A couple of issues here. It must be
24 timely. One of the things that we would like to
25 do is build on the successful efforts we had on

1 interstate capacity with TURN, ORA and various
2 other agencies at the Commission.

3 We feel like our interstate capacity
4 contracting process went very well from a
5 regulatory standpoint. We got good results, good
6 decisions. We feel like we got a portfolio that
7 puts the core customers in a position to take
8 advantage of various opportunities in the future.

9 We believe there needs to be an up-front
10 approval process. We don't know if that should be
11 an RFP or a bilateral individual negotiations that
12 are approved later, but we think that needs to be
13 determined in a timely manner, especially since
14 SoCal Gas has an affiliate that's likely to be
15 involved in that.

16 It's to our advantage to have that
17 process as transparent as possible, and we want to
18 make sure that the PUC sets it out so that that is
19 allowed.

20 I think one of the things that we need
21 to do is to recognize that we need to go forward
22 in a timely manner, and we need to recognize that
23 all regulatory and other issues will not be
24 completely resolved before the contracting process
25 should be done, and we need to allow for this in

1 the contracting process.

2 But to believe that we're going to all
3 uncertainty, all ducks in a row and out of the way
4 before we need to make a few commitments, I think
5 that's unrealistic. Thank you.

6 MR. MAUL: Okay, Jim, thank you very
7 much, it was very helpful. Any questions for Jim?
8 Chairman?

9 COMMISSIONER DESMOND: Well, very good
10 comments. We heard some of the speakers this
11 morning talk about whether you view LNG as
12 something unique, this terminal, or simply as an
13 extension of a pipeline. And I'm wondering if
14 SoCal Gas has a perspective on that.

15 That was the very first question you
16 asked, I think, which is is this something
17 different or a pure substitute for the gas we get
18 currently off the interstate pipeline system? Do
19 you have a perspective or a position that you'd
20 like to communicate?

21 MR. HARRIGAN: Well, I think that what
22 counts for us is a portfolio that has diversity
23 and reliability. And I think we do believe that
24 the interstate capacity and LNG are basically the
25 same. And I think the decision by the Commission

1 says, kind of, that they're the same.

2 On the interstate capacity we get
3 uniform, daily quantities. We get reliable
4 supplies, we know when they show up. And we fix
5 that source of supply to a fixed point in the
6 Basin. And I think that's really the concept that
7 we would want on the LNG.

8 That's not saying that's an absolute
9 requirement, but we don't, on the interstate
10 capacity we don't rely on arbitrage to get our
11 gas, and we don't think that's appropriate on LNG.
12 We're interested in reliable supplies with deals
13 that are based on a baseload continuous supply.
14 That's the way I would look at it.

15 I hope that answers your question, I'm
16 not --.

17 COMMISSIONER BOYD: Early in your
18 statement you set me all up for your possibly
19 broaching a gas quality issue, but you didn't
20 really say it. I just wondered if you have any
21 comments on that concern, even though we know
22 there's a separate process that this agency, the
23 PUC and the ARB went through, extensive hearings
24 recently?

25 MR. HARRIGAN: I think the gas quality,

1 the issues that John Dagg and Dave Taylor talk
2 about, and the issues that the folks that really
3 bring the LNG to the US, those are the people that
4 would be best to answer that.

5 All I know is we want so many BTU's
6 delivered uniformly at a low cost. And safely.
7 And those are the guys, that's above my pay grade,
8 those are the real guys you need to talk to about
9 it, those are the ones that really do the hard
10 work.

11 COMMISSIONER DESMOND: One other
12 comment. I wish that I could have kept track of
13 the number of times you said the word "timely" and
14 the need to have timely response, because I think
15 that's absolutely critical to this, and I don't
16 know that we heard that from the lenders although
17 I'm sure that they incorporate that risk.

18 But the sense of what that adds to the
19 cost when we're out there, and how far along in
20 the process, in an approval process, do you think
21 that you need to get permission to go forward to
22 negotiate, before that terminal, say, has
23 completed construction?

24 MR. HARRIGAN: Well, that's hard to
25 answer because I don't know that our contracts,

1 any contracts that we would enter into would truly
2 make a difference on whether a plant gets built or
3 not.

4 But, you know, and this is just from a
5 strictly selfish viewpoint, from a core portfolio
6 standpoint, we would like to know what's out
7 there, how can we commit for it, and if it's out
8 there or not out there in the way we want it
9 delivered, we would like to make adjustments in
10 our asset portfolio to make sure that we've got
11 the reliability and low cost gas going ahead.

12 I can't tell you about what influence
13 that might have on plant construction, what
14 influence that might have on financing or anything
15 else, but I expect that everyone would like a
16 little greater certainty sooner rather than later.

17 MR. HOWARD: If you don't mind,
18 Commissioner Desmond, being in the development
19 side of the business, whether or not I sign a
20 supply contract is not going to be the determining
21 factor, because the permits are really the key
22 part.

23 And having a lead agency or somebody
24 that's going to help guide, you know, from that
25 policy perspective, through that process is

1 critical. Whether or not we have the supply or
2 not, it's a question of whether or not we can have
3 the public support that people truly want that
4 supply, and dealing with those permitting issues
5 are really the huge hurdles there that create that
6 uncertainty that I see on the timely side of Jim's
7 comments.

8 MR. MAUL: Any more questions? I guess
9 one question I have, how long term are you looking
10 for supply rates. Your interstate pipeline
11 commitments, although you have right of first
12 refusal, kept your options open.

13 Are you keeping options open, are you
14 thinking about keeping options with your LNG
15 supply contract?

16 MR. HARRIGAN: Well, again, I do not
17 want to get ahead of -- I think what we want to do
18 is build the same kind of relationship that we had
19 at the Commission on the interstate capacity. So
20 what I want to do is leave that question open.

21 I think, I'll give you a personal
22 opinion on this, I think we ought to think about
23 LNG contracting just like we think about
24 interstate capacity contracting. As staggered
25 contracts with different suppliers, it seems to

1 me, and differing terms.

2 There's nothing magic about 20 years, 15
3 years, you know, five years. I think we need to
4 see what's out there, I think we need to have a
5 mechanism that allows us to do that, allows the
6 suppliers to respond and look at it from that
7 perspective.

8 And other than LNG going on, there's
9 Rockies production being built, there's all kinds
10 of other issues associated with the western supply
11 basin. So I don't think you can single out a
12 single source and say, you know, this is what we
13 needed to lock up or this is the dominant
14 consideration.

15 We need to look at this on an integrated
16 basis, that's why I'm so pleased with what we've
17 done on the interstate capacity side.

18 MR. MAUL: All right, Jim, thank you
19 very much. Very helpful thoughts and questions
20 we're all going to answer together. So,
21 appreciate it.

22 All right. Next we have Bob Howard,
23 Vice President for Gas at PG&E, another potential
24 buyer of, obviously a buyer of gas and a potential
25 buyer of LNG.

1 MR. HOWARD: And a transporter.

2 MR. MAUL: And a transporter.

3 MR. HOWARD: Thank you very much, David,
4 and Commissioner Desmond and Commissioner Boyd.
5 It's a pleasure to have your attention today, and
6 I do have to acknowledge Mr. Morse as somebody
7 I've worked with and it's the first time I've seen
8 you in probably a number of years, so thank you
9 for being here. And Monica I did read your paper
10 on the deep water ports, and I thought that was a
11 very good piece there, so --.

12 I am just pleased to be here. If you
13 don't mind, it's been a long day. I mean,
14 Peppermint Patty did remind us of a secret of life
15 one time. If anybody saw that cartoon, I still
16 have it from 1984, she told us that "in the world
17 there are more questions than there are answers."

18 Marcie was a little confused by that
19 point, but she turned back to Marcie and said "so
20 always be the one to ask the questions."

21 (laughter)

22 So good job, Jim. Nice try, pal, we're
23 still on the standards.

24 So, I am Bob Howard, I'm vice President
25 at PG&E, and I am responsible for natural gas in

1 the following way, I head the natural gas
2 transmission business unit for the company. That
3 is also known as California Gas Transmission.

4 That is our high pressure pipeline
5 system that operates from Topock to Malin, Oregon.
6 It's the backbone. And all the local transmission
7 lines that serve our city gates throughout the
8 system, down to 60 pounds of pressure.

9 Recently I also assumed responsibility
10 for our Clean Fuels Transportation Program, which
11 is not just natural gas but it's electrical
12 vehicles as well, and I do see that as a key part
13 of our clean air future.

14 I am here to discuss what we believe is
15 the need for supply and our concern over prices.
16 If we're honest with ourselves, there's no a
17 consultant in the room who could go back and
18 forecast average prices of over \$6 this year,
19 average prices of over \$5 last year, average
20 prices over \$3 the year before.

21 People were saying, and one of the
22 consultants who had been very active in this
23 industry, supporting the industry, both AGA and
24 NGA, basically forecasted equilibrium prices two
25 years ago in an infrastructure study of about \$4-

1 5.

2 Last week, at the American Gas
3 Foundation ACEEE conference, those equilibrium
4 prices, basically based on the same data set, were
5 \$7-8. The forecasts are lagging behind actual
6 prices for the most part in what we're seeing.

7 And frankly, I just have to say that
8 PG&E is concerned. As a buyer for our consumers
9 that is something that definitely has our
10 attention. And we're wondering what's going on.

11 So I'll just say it that way, because it
12 is a concern. I mean, we are a buyer, as Jim is,
13 for over 3.9 million gas customers. And most of
14 that 3.9 million gas customers are residential
15 consumers.

16 Our forecasted core requirements are 800
17 million cubic feet a day, and our procurement
18 demand fluctuates seasonally, for the core, to a
19 peak of about 1.5 BCF a day to in the summer about
20 500 BCF a day.

21 We hold firm transportation rights into
22 all the supply basins, and we do have growing gas
23 procurement needs for both PG&E-owned generation
24 as well as generation that we're buying from
25 others, where we are acting as the agent for the

1 purchase of gas. That's what we mean by total
2 electric generation.

3 This has a significant impact on the
4 value of our assets, because one of the things
5 that we've seen is as prices increase, basis
6 shrink. PG&E's gas transportation system really
7 is the only intrastate open access provider of
8 transportation services with full tradeable
9 capacity rights in the country.

10 And when you're trading 2/3rds or your
11 revenue requirements at risk, basis is vital to
12 us, at the margin. So that does affect it.

13 And what we're seeing, as the price of
14 natural gas rises that basis shrinks. And we can
15 show you that effect. And so we're concerned from
16 an evaluation perspective since this is a
17 tremendous asset to this state, and we don't hold
18 the capacity or supplies that bring that, and we
19 have really no way as a pipeline to attract the
20 supplies, other than our good service.

21 And that's one of the things that I
22 think you'll find out PG&E's gas transmission
23 business, it is among the best and it has very
24 high customer ratings. So we do keep our
25 customers for a long time.

1 One of the things that I wanted you to
2 notice about this, one of our critical assets, and
3 vital, and it was mentioned today, is our storage
4 fields. We have the fourth largest storage field
5 in the country at McDonald Island. That asset is
6 vital to the state.

7 And we are the 11th largest, behind
8 SoCal Gas, in that ranking of storage services in
9 the country. And the way it was said earlier
10 today is that we, it wasn't quite an over-reliance
11 on storage, but we do have storage capacity and we
12 do rely on storage capacity to meet our peak.

13 For PG&E, it's system, up to one-third
14 of the flowing supplies that are moving on a peak
15 winter day, and it's not necessarily an abnormal
16 peak winter day, can be coming out of McDonald
17 island.

18 So that system is vital to our
19 reliability, it's vital to the security of the
20 state, and we do offer that service on an open
21 access basis, because not only do we provide firm
22 transportation storage services to our core
23 customers and anybody that wants to have non-core
24 firm storage, we do provide very flexible peak and
25 lend services, which I will say is uniquely

1 designed for LNG or any other supplier to use that
2 particular storage to manage the swings between
3 seasons.

4 And it's a very good service and it's a
5 competitive service. We compete with two other
6 storage providers in Northern California -- Lodi
7 and Wild Goose -- to provide that storage. So
8 it's an active, very vibrant liquid market.

9 I would like to point out that, a little
10 known fact as you look at this, actually PG&E as
11 city gate has more trades than what happens at
12 Henry Hub. Last week 800 trades occurred at the
13 PG&E city gate. On a given day 600 trades
14 occurred at Henry Hub.

15 So we are one of the most liquid markets
16 that exists in the country. And when I say
17 liquid, that means transparent. You know what
18 we're paying for the gas.

19 The key point I'll say here is just look
20 at this asset. That basically just runs the
21 length of the state, from Topock to Malin, Oregon,
22 with the various laterals off of the system.
23 Right in the center here, not too far from
24 Sacramento, is our storage hub, there with
25 Pleasant Creek, Los Medanos, and McDonald Island.

1 We serve directly, in addition to the
2 core, 375 large end use customers. Those are gas-
3 fired electric, oil refineries, chemical producers
4 and other industrial customers. And we serve over
5 10,000 megawatts directly of electrical generation
6 capacity today.

7 I'm going to show you two slides that
8 kind of reflect the concern that we have as we
9 look at prices today, and really can't come up
10 with a good explanation for, other than the market
11 is high and the value of the gas is high.

12 If you look at them on a production cost
13 basis, our models are not going to show these
14 kinds of prices that we are seeing today. Our
15 models within PG&E would come up with a \$4 gas
16 price equilibrium assuming, you know, we get
17 additional supplies from Alaska.

18 What's significant here is that, while
19 we are a large demand, California alone is only
20 1/10th of the total average daily demand for
21 natural gas in the US. 48 BCF of the daily
22 average demand is east of the Rockies. 12 BCF is
23 west of the Rockies, including SoCal Gas's demand
24 and the 11 western states.

25 The bulk of the production is east of

1 the Rockies. So let me take you to the next
2 slide. If you look at where the investment has
3 been, whether or not there is excess capacity or
4 not, the bulk of the investment in the last five
5 years has been east of the Rockies, and the bulk
6 of that investment has been paid for by producers
7 in the Rockies to take that gas to higher valued
8 markets.

9 The investment amount, and that includes
10 LNG, has been almost four times the amount that
11 has been spent to bring gas west. And the
12 capacity that has been created, going east, is
13 almost five times the amount of capacity created.

14 So whether or not, we've been talking
15 today a lot about whether or not we are over-
16 produced. And we've heard people tell us that
17 this is a crazy market here in California, in so
18 many words.

19 What's happened is they can't count on
20 that basis. But that's mostly because prices are
21 high. And the only way that I know of, and this
22 is the kind of alternatives that we're looking
23 for, is to increase our access to markets.

24 So at this particular point basis means
25 nothing, it's all about accessing new supplies and

1 giving us more options.

2 PG&E's involvement in LNG-related issues
3 has been recent, but I'll tell you it's been
4 vigorous. I mean, we have particularly stepped up
5 our efforts in the gas quality area, we've been
6 working on a joint committee with AGA and SoCal
7 Gas to come up with a common gas standard for the
8 state of California, working with the SoCal Gas
9 team, and our team is vitally interested in that,
10 and I think we're getting very close.

11 We've also been, as I said, concerned
12 about prices. And in the context of the natural
13 gas working group that David Maul and Harvey have
14 been leading here, we've been trying to engage
15 with our colleagues in the utilities industry, and
16 the one issue that we all agree on in common is
17 that high prices are hurting our consumers.

18 So what we've been doing is looking at
19 trying to get a study, a California based study,
20 to look at what the effects of these high prices
21 are, if they continue for any period of time, is
22 on our economy. What's it going to do to our jobs
23 and our industry in this state if they stay at
24 this price.

25 And we need to know that because it

1 won't matter whether or not we're getting new
2 supplies if none of the industries in this state
3 stay here. And we will continue to be an
4 advocate, and the last bullet, for working with
5 the CPUC and the CEC to help get us together and
6 look at these issues.

7 Because it is a concern, prices are a
8 concern to us. Our view of the natural gas
9 supplies is that what we're seeing is a very tight
10 supply/demand balance. We have been doing, in the
11 domestic United States and in North America,
12 including Canada, there have never been more wells
13 operating.

14 But we have seen the production flat or
15 hardly growing during this particular period of
16 time. That's mostly because you are seeing
17 significant declines in all basins in these areas.
18 So the only significant new sources of supply that
19 exist to us, in the capacity that's necessary to
20 support a BCF a day increase in incremental
21 supplies, are in Alaska or through LNG.

22 And so we're looking at how we get some
23 of these supplies here. We don't know the answers
24 to that, but we're certainly interested. We will
25 consider purchasing LNG to the extent that it

1 becomes available at a competitive price, and
2 frankly to the extent that it comes to California,
3 not to the Gulf.

4 Because what's happening in the Gulf is
5 you're seeing increases in demand that dwarf the
6 kinds of growth and demand that we're seeing in
7 California. And I can assure you that that gas
8 will be consumed in the Gulf, and you really won't
9 see those molecules here.

10 And we need to be sure we understand how
11 much gas in the Permian Basin and the Rocky
12 Mountains will be displaced coming back to
13 California. I'm not so sure that it will. So
14 we're monitoring that situation and really trying
15 to come up with our own view of that, and
16 monitoring the progress of what we can see and how
17 we can develop an LNG resource on the West Coast.

18 Because frankly, for the next ten years
19 we don't see Alaska available to us, it will take
20 that long to develop, so what are we going to do
21 in the meantime.

22 And that ends my presentation. I'm
23 open for questions. Thank you.

24 MR. MAUL: Good, Bob, thanks very much.
25 Questions?

1 COMMISSIONER DESMOND: Quick question,
2 and perhaps you both can answer. We've been
3 talking a lot about California's gas needs, and
4 we've seen some figures on the global demand and
5 the national demand.

6 But I'm hoping perhaps, given the large
7 volumes that you're procuring, you could take a
8 moment and comment on the growing demand for gas
9 and its impact here on the need for LNG perhaps,
10 or the terminal access question is a question that
11 we're really trying to get at, from Arizona and
12 Nevada.

13 I mean, how are you seeing that have an
14 impact. When you indicate basis means nothing,
15 that's a pretty bold statement.

16 MR. HOWARD: I understand that. But at
17 the same time, kind of where it comes from, when
18 you look at the price of gas, putting pipe in the
19 ground or the infrastructure necessary, that's the
20 cheap part of the equation. So that's where that
21 statement comes from.

22 With respect to Arizona, at least
23 looking at ten year projections, relative to,
24 let's say, PG&E's service territory, the ten year
25 projections of their gas needs, based upon power

1 plants that are already built and the kind of
2 economic development that's occurring in that
3 state, you're seeing an increase over the next ten
4 years of about 700 million cubic feet a day are
5 their requirements over the current requirements.

6 Relative to the incremental demands in
7 Central California, lets say, of 340 million cubic
8 feet a day, they're approaching two and a half
9 times greater than us.

10 So, as we heard Mr. Morse talk about,
11 the fact that there could be two, three, four
12 hundred a day of LNG right there at Ehrenberg,
13 that has as much chance to go into Ehrenberg, to
14 meet their relatively higher demands, than it does
15 to come here, unless we're in a position to
16 actually put that into our portfolios.

17 MR. HARRIGAN: I would agree with
18 everything Bob just said, if you don't have LNG in
19 California you're more dependent on the east and
20 the Rockies and the growth of the Rockies I think
21 is the thing that's really caused it.

22 If you look at the growth of Arizona and
23 New Mexico, and if you look at the growth even in
24 Mexico without LNG, someone has to provide for
25 that growth, it just doesn't make much sense for

1 us not to be considering LNG.

2 We do a little tracking, I think that
3 David has seen, that shows a snapshot of the core
4 monthly price for a sample of utilities across the
5 US. And for the last several years we've had the
6 California utilities toward the bottom of that
7 range because the supplies and infrastructure
8 delivered to California allow that.

9 The current expansion was a good thing
10 for us, and we want to keep it that way. One of
11 the ways to do that is to be considering LNG. So
12 that's about all I had to add.

13 MR. MAUL: Does that answer your
14 question, Commissioner? Yes. Commissioner?

15 COMMISSIONER BOYD: Well, I hadn't met
16 Mr. Howard before today, but I notice he and I
17 tend to agree a lot on the view of the east versus
18 the west. So I look forward to talking to you
19 more.

20 MR. HOWARD: Thank you, Commissioner
21 Boyd.

22 MR. MAUL: Harvey?

23 MR. MORRIS: Just one question. You
24 didn't seem to get deep into what PG&E's plans are
25 for LNG. Do you have any specific plans right

1 now, or what do you think PG&E might be doing?

2 MR. HOWARD: Well, I don't have any
3 specific plans, but there's a lot of things that
4 we're working on that we are preparing to bring
5 forward at some point, but they're not completely
6 right yet.

7 But questions that we certainly have.
8 You asked a question earlier, Harvey, about
9 whether or not Line 1903, for example, would be a
10 way for bringing gas up from Ehrenberg.

11 And certainly we have been participating
12 in the Line 1903 process. We are looking to have
13 an interconnection in that process and trying to
14 work with the parties on that facility, to be able
15 to access that for a time when, or to put
16 ourselves in a position to access that, when LNG
17 might be onscreen in January or first quarter of
18 2003. So that's one example.

19 And also, we've, at least in the course
20 of discussions, as we get involved in the working
21 groups, we hope to be able to, to the extent that
22 there are projects that have been developed in
23 Southern California we're certain looking to work
24 with SoCal and participating in their projects and
25 looking at interconnections.

1 So frankly, our efforts to date have
2 focused on the infrastructure and the
3 interconnections, and we have not directly been
4 involved in LNG, but certainly it's not out of the
5 question for us in terms of possibly developing
6 that or somehow promoting -- and I'll say little
7 "p" promoting -- some way of promoting LNG and
8 getting that to California.

9 MR. MAUL: Okay, Bob, thank you very
10 much for coming here today. And now we're going
11 to move on to another gas customer. Brad Barnds
12 is Vice President of Calpine for Fuels, and Brad
13 is a single, very large customer purchaser, and
14 looking obviously at buying a lot of gas for your
15 power plants, and also buying potentially gas on
16 the LNG project.

17 So Brad, we look forward to your views.

18 MR. BARND: Thank you, David, and thank
19 you Commissioners Boyd and Desmond for allowing us
20 to have an opportunity to address your workshop
21 here today.

22 My name is Brad Barnds, I'm Vice
23 President of Fuels. My primary responsibilities
24 are to oversee Calpine's LNG development and
25 procurement activities across North America.

1 But also I keep hearing Alaska brought
2 up, I've also spent the last year and a half going
3 back and forth between Houston and Anchorage and
4 Juneau and Fairbanks, looking at Calpine's
5 opportunities to be a significant purchaser of
6 Alaska's gas, and we are a strong proponent of
7 both LNG and Alaska.

8 We believe that North America, and
9 California in particular, need access to both
10 resources. It's not an either/or situation, the
11 world, particularly North America, needs both.
12 And this is not a race to the finish line between
13 Alaska and LNG, we really are focusing on bringing
14 both resources to bear in North America.

15 As you mentioned, my comments really are
16 oriented as a gas consumer. Calpine, we believe,
17 is the largest single consumer of gas in North
18 America. We're also the largest independent power
19 producer, and I'll show you some statistics on
20 that.

21 We're vitally interested in the topics
22 of this workshop, and particularly the
23 underpinning theme here of bringing on new
24 supplies into California, ensuring access to these
25 new supplies, and of course maintaining or

1 sustaining deliverability over the long term.

2 Those are vital to Calpine. We are a
3 power generator. We make our living off of
4 purchasing gas on a long-term and reliable basis
5 at competitive prices and selling power into the
6 marketplace.

7 That's how we earn our living, so the
8 most important thing from our perspective, other
9 than finding long-term secure markets to sell
10 power is finding access to long-term, reliable
11 gas. And that's a key consideration for us,
12 again, as the largest gas consumer in North
13 America.

14 I guess a little bit on what my
15 activities and what my company's activities are.
16 We're really looking at the LNG business on a
17 number of different fronts and trying to
18 participate in the value chain that I keep hearing
19 is out there.

20 And really, as a developer we do have
21 our own proprietary LNG development project in
22 Oregon, at the mouth of the Columbia River. It's
23 referred to as Skipanan (sp). It's on one of the
24 maps in the back of the room.

25 We had looked at an earlier northern

1 California project about a year ago. That one did
2 not go forward. But besides being a developer of
3 an LNG project per se, we're also heavily involved
4 in all of the other developments that are going on
5 around North America, the Gulf of Mexico, the
6 eastern seaboard, wherever, and looking for
7 opportunities to take out contract capacity with
8 third party developers.

9 If you're doing that you necessarily
10 need to find access to supply. So the other part
11 that's going on is actually looking for long-term
12 supplies with the overseas suppliers, whether it's
13 international, national oil and gas companies, the
14 super majors, or more particularly in many cases
15 host countries, which we find are quite anxious to
16 sell gas to the end use markets in California and
17 in North America.

18 And we can also just be an offtaker. It
19 could be that we're just a buyer of gas at the
20 tailgate of an LNG facility. So there's really
21 four major areas that we're looking at right now -
22 - as a developer, contract holder, purchasing the
23 gas, and thus being an offtaker.

24 Those are really significant things that
25 we're really focused on right now. Along those

1 lines Calpine is really uniquely situated as a
2 consumer in North America and in California to
3 offer things that have been mentioned here
4 already, the ability to make long-term commitments
5 on both volume and price.

6 Those three things -- term, volume, and
7 price -- are what is necessary to underpin a lot
8 of these developments and the infrastructure
9 development that we're all hoping is actually
10 going to occur.

11 We don't have the same impediments that
12 a lot of other potential purchasers have, so far
13 as making those type of commitments. Ours are
14 more commercial in nature and don't have the same
15 regulatory oversight as others may have.

16 So we believe that we bring something to
17 the LNG equation because of our flexibility and
18 entrepreneurial nature of our business model, to
19 be able to go out and contract for supplies in the
20 open market.

21 A lot of this I've already said. The
22 largest independent power company in North
23 America. Right now we have 92 plants in 21
24 states. We're producing around 26,000 megawatts
25 in operation today. We do have a number of

1 plants that are under construction right now.

2 On average we consumer 1.7 BCF a day,
3 although we actually handle and manage closer to
4 two and a half BCF. We do have a small AMP
5 company that we currently produce right around
6 100,000 minimum BTU's today.

7 If you look at this in total we
8 represent about three percent of the United
9 States' total generation capacity and along the
10 way we consume about three percent of the
11 country's gas.

12 This is a map of where our power plants
13 are located. You can see heavy concentrations in
14 California and in Texas and then along the eastern
15 seaboard, principally up in the northeast and the
16 New York area.

17 We do have plants all throughout the
18 rest of the country, as I said in 21 states, but
19 we don't have the heavy confluence of power plants
20 in the mid-continent region of the country for a
21 couple of obvious reasons. One, that's where a
22 lot of coal is produced and there's a lot of coal-
23 fired generation, which is one of the factors that
24 Calpine is confronting from a competitive
25 perspective is how does Calpine, in today's gas

1 environment, compete with coal in our ability to
2 get our power plants to run at a higher load
3 factor, which is what we'd prefer to see. You can
4 see at the bottom how many we have in operation.

5 We also have 19 geothermal plants, which
6 I believe makes us the largest geothermal producer
7 in the world.

8 Kind of drilling down into our gas
9 demand, we're really, I mentioned about 1.7 on
10 average, but that equates to around four BCF a day
11 on peak gas demand. Now that's something we don't
12 get very often, but it is interesting to note that
13 our notional demand is that high.

14 In the WSCC we currently have, or will
15 have let's say, around 8,800 megawatts, which
16 would have a 1.6 BCF per day peak day gas
17 requirement. On average we would estimate, that
18 would be around, let's just call it 750,000 on
19 average. That's in the total western United
20 States.

21 In California alone we have around 7,300
22 megawatts. In Northern California, which is the
23 predominant area where our gas-fired technology is
24 located, around, just under 6,000 megawatts, and
25 on a peak day again, about 1.1 BCF per day. And

1 we do have three plants in Southern California
2 that represent about 1,300 megawatts and around a
3 quarter of BCF of total gas consumption.

4 We have three plants in the balance of
5 the WSCC, in Washington, Oregon, and that should
6 be Arizona, again that's another quarter of BCF.

7 So you can see that our interest in
8 long-term reliable supply in the western United
9 States and principally in California and even more
10 in Northern California is very critical to
11 Calpine.

12 So the obvious reason for this
13 conference, what are some of the challenges.
14 There is a perception, and I think it's a reality,
15 that North American supply is in decline. We have
16 seen the rapid increases in price. That has been a
17 competitive disadvantage to Calpine.

18 The current high prices, as you noted,
19 Bob, are definitely a competitive disadvantage
20 relative to the competition, that being
21 principally coal and some of the other
22 technologies.

23 There has been this volatility. I'll
24 make one quick comment on that. Our desire to be
25 accessing long-term LNG supplies is the ability to

1 communicate a long-term, reliable and stable price
2 to our market, that being the power consumers of
3 North America.

4 It's very challenging and difficult for
5 us to create those long-term stable prices in
6 North America right now, and if we believe we have
7 to go overseas to acquire it, because we may be
8 getting access to a long-term fixed price, and
9 that would allow us to communicate a long-term
10 fixed power price.

11 It's just another opportunity, another
12 tool in our toolbox to go out and create
13 structures that allow us to be competitive and to
14 offset this volatility that we see is so prevalent
15 in the marketplace today.

16 The last one is basically the EIA type
17 statistics. About 24 percent of all energy comes
18 from natural gas, and power generation represents
19 19 percent.

20 One of the comments that's been
21 prevalent here already and mentioned is
22 diversification. And we certainly believe that
23 diversification is significant part of our
24 business plan, and we think it should be for the
25 state as well, even though we are focusing on LNG

1 today we shouldn't neglect the other parts of a
2 diversified portfolio.

3 And put it into context, put it into a
4 balanced portfolio approach. It's not going to be
5 the sole provider of next year's supply, it's just
6 part of the equation. And we need to put it in
7 that context.

8 But we do believe that energy efficiency
9 should be at the top of the list of part of our
10 diversification of our portfolio. Obviously the
11 interstate pipeline capacity storage, in-state
12 production, we should not forget that in-state
13 production is a vital component for California,
14 and the ability to self-produce should be
15 recognized as a viable component.

16 Again LNG, and then other non-
17 traditional sources -- I don't know if I have any
18 good examples, but there are other things that we
19 can bring to bear as things that can mitigate our
20 dependence on any one of these particular
21 resources.

22 Just some broad comments about the
23 access to LNG and deliverability. I think first
24 there's the recognition that California needs more
25 gas resources, including LNG, in order to provide

1 reliable power and also to meet the rest of the
2 market's requirements.

3 We believe that the market should
4 provide choices, including utility options and
5 non-utility options. It's not one or the other.
6 We shouldn't designate the utility to be the
7 provider of all, I think there should be choice.

8 We also believe that the market should
9 be allowed to provide these resources at the best
10 price and at the best available terms. I think
11 that, from a policy perspective -- and this has
12 been mentioned as well -- is a recognition that we
13 do need to have a level playing field and that
14 transparent pricing is very critical in our
15 ability to foster development and to have the
16 right number of market players.

17 We should, as a nation, as a state,
18 encourage active resource development and minimize
19 constraints and barriers to entry. We do believe
20 that the regulatory environment should allow for
21 alternatives and not specifically mandate any
22 courses of action, and certainly, along the lines,
23 not create undue uncertainty..

24 We're looking at long lead time, very
25 capital intensive. It's good to know what the

1 rules are before we get into major capital
2 investments and not change along the way.

3 And again that we think there are a lot
4 of state and federal laws already in place, but
5 having said that, a successful project from a
6 development perspective, in California, is going
7 to observe both state and federal rules, whatever
8 they happen to be.

9 And that concludes my comments.

10 MR. MAUL: Good. Thank you, Brad. Very
11 helpful. Questions?

12 COMMISSIONER DESMOND: If you could just
13 perhaps address the question that we've been
14 asking about open access or managed access, and
15 whether or not you see that as a key element, or
16 given your large volume that you view yourself as
17 an anchor tenant and therefore is not as critical
18 in terms of how you'd be out when an owner would
19 be in looking for that.

20 Or does it vary based on the market you
21 happen to be in?

22 MR. BARND: We're very active in the LNG
23 market, as I mentioned. We do see ourselves as a
24 potential anchor tenant on a lot of these
25 projects, and we bring a certain amount of mass to

1 a project, and the ability to enter into contract
2 terms that are good for Calpine.

3 And we believe that, on a contractual
4 basis we're able to manage that process.

5 COMMISSIONER BOYD: You broached the
6 subject of coal versus gas, and I'm aware that
7 just about a year ago your company stated, as a
8 company policy, to build only clean burning gas-
9 fired combined cycle plants -- and I think you
10 pulled out of a coal plant.

11 Is this differential, the increase in
12 gas costs, the differential between gas and coal,
13 contributing to your current financial heartburn,
14 as a company?

15 MR. BARND: I think that our competitive
16 position would be greatly enhanced if we were able
17 to solve the gas situation in North America and
18 bring prices back into line. And I don't want to
19 comment whether the lack or the inability to enter
20 into contracts because of gas prices has
21 contributed to our financial situation.

22 MR. MORSE: You had mentioned the
23 possibility of entering into an arrangement
24 overseas, maybe in becoming an equity interest
25 owner to get a long-term contract at a fixed

1 price.

2 Are there other ways to get fixed price
3 long-term contracts?

4 MR BARNDS: Well, let me clarify. It
5 was not an equity participation in upstream
6 reserves, it was really dealing with, in our
7 instance -- we had gone overseas, we had been with
8 a number of national energy companies and spoken
9 with them to have them enter into a contract
10 directly with us rather than going through, say, a
11 major oil company or an intermediary.

12 Where we were actually, we noticed
13 before that a number of the host countries were
14 actually taking equity development rights and
15 actually funding their own participation in
16 liquefaction projects around the world. They're
17 out there trying to peddle some of their gas,
18 we're interested in talking to them.

19 We're looking for, in many instances, a
20 physical, fixed gas price, rather than trying to
21 get a financial fixed price we need to go to the
22 physical market and contract directly with someone
23 who holds the physical gas and have them contract
24 directly with us.

25 And that is because of the size of the

1 capital investment overseas. Some of the parties
2 that we've talked to are willing to enter into,
3 mutually, long-term fixed price contracts, because
4 it's going to mitigate and provide something of a
5 floor relative to some of their other options.

6 MS. SCHWEBS: Two related questions.
7 First, you mentioned your Oregon facility. If you
8 could tell us a little bit more about that I'd
9 appreciate it.

10 And secondly, could you give us a sense
11 of what the transportation differential is coming
12 from Oregon versus Los Angeles as a point of
13 entry? And perhaps PG&E can help a little bit on
14 the PG&E portion of that line?

15 MR. BARND: Okay, the first question, as
16 to our Skipanan LNG project. It's a early
17 development project. We have site control. It's
18 right near the little town of Warrington on the
19 Skipanan peninsula.

20 We have secured, as I said, the land
21 rights, and we're in the early pre-NEPA filing
22 mode of doing all of the legwork on the ground
23 with the locals, and canvassing the state and
24 federal agencies about moving forward with an
25 actual application.

1 That's about as far as we've gone with
2 it. It's a very early development project, but we
3 do have site control, and that is the first step
4 in moving forward with the project.

5 On the second one, transportation
6 differentials between Oregon and Los Angeles, I
7 think I'll pass the buck over here.

8 MR. HOWARD: I was just going to say,
9 Henry Morse this morning gave you a little bit of
10 an answer to that question, where he pointed out
11 that some of those projects do require the
12 additional pipeline capacity to connect those to
13 the main line to bring them into the GTN system
14 which would then come down our system.

15 So, in round numbers, adding up all the
16 pieces of the tariff, I don't know really what the
17 capital costs are of something from Warrington.
18 It would be on the order, in very round numbers,
19 \$200 million plus or minus 50, to get it to the
20 main line facilities.

21 Unless it was going to be consumed in
22 Oregon, and then you've got roughly the GTN
23 system, the PG&E system, and then into SoCal.
24 Then you're talking about, you know, another 40
25 cents in round numbers if you're paying full toll.

1 MR. MAUL: Okay. Brad and Jim and Bob,
2 thank you very much. These have been very helpful
3 insights from the gas customers perspective.

4 We have three more folks to talk, two
5 customers and a customer-related person that will
6 give us some more advice here. The next three
7 folks that are going to be coming up are Norm
8 Pedersen from Southern California Generation
9 Coalition; Steve Mussell, the General Manager of
10 Special Projects at Chevron Global Gas; and
11 Marcellus Catalano, who is CEO of Alea Trading,
12 actually a trader, not directly a gas purchaser
13 but a trader of gas.

14 So, let's welcome Norm, Steve and
15 Marcellus. We appreciate you guys coming up to
16 Sacramento for us here today.

17 MR. PEDERSEN: David, Commissioners,
18 Harvey, Monica, thank you very much for having me
19 here today. I am Norman Pedersen, I'm speaking on
20 behalf of the Southern California Generation
21 Coalition.

22 SCGC consists of seven generators in
23 Southern California. The members of SCGC control
24 approximately 12,000 megawatts of gas-fired
25 capacity. Actually that's going up tomorrow.

1 We're very happy to say there will be the
2 dedication of the Magnolia Power Project in
3 Burbank, so we're going to go up by another 330
4 megawatts of badly needed generation capacity
5 situated in the center of the Southern California
6 load center.

7 All of our generation is located in the
8 load center in Southern California. It's not out
9 in the desert somewhere, it's in the load center.
10 As a matter of fact, this morning John Dagg was
11 talking about the LNG projects that would deliver
12 into Ventura, and how they would be delivering to
13 the load center in Ventura.

14 Our generation facilities, the SCGC
15 member generation facilities located along the
16 Ventura coast are the facilities that make Ventura
17 a load pocket or load sink for SoCal Gas.
18 Likewise, it's the generation facilities of the
19 Southern California Generation members that make
20 Long Beach the load sink or load pocket that it is
21 on the SoCal Gas system.

22 Generators need to see increased
23 liquidity in gas markets. We want to see
24 increased gas supply. Samuel Gompers said "what
25 the American worker wants if more and more of more

1 and more", and that's what we want when it comes
2 to gas supply.

3 We also want to see increased diversity
4 of gas suppliers. We very much appreciate the
5 service we get from BP, that we get from Coral,
6 but frankly we need a longer list of people to
7 call. And we hope that the development of LNG
8 projects brings us that.

9 The benefits of increased supply and
10 supply diversity are multiple. Increased supply
11 will help stabilize gas prices. That in turn --
12 and this is very important for us -- will help
13 stabilize electricity prices.

14 We'll see a reduced chance of the price
15 hikes that have afflicted California in the past.
16 And additionally, there's a lot of talk about
17 renewables, but renewables are not firm. Increase
18 of an assured supply of natural gas, through the
19 advent of LNG projects, we believe will enhance
20 the use of gas-fired generation to provide support
21 for non-firm renewable resources.

22 And we are developing non-firm renewable
23 resources. That is of course an objective of the
24 municipal utilities as it is of investor-owned
25 utilities in California.

1 As we see it, access issues break down
2 into three categories. First is tanker access to
3 the terminals, second is access from the terminals
4 to the surface pipelines, and third customer
5 access to the supply at the point of
6 interconnection between the terminal pipeline, the
7 proprietary pipeline coming from the terminal, and
8 the gas utility receipt points.

9 On the first issue, tanker access to
10 terminals. This slide might look a little skimpy
11 to you. It didn't start out that way. When it
12 was circulated, I can assure you, it was quite a
13 robust slide.

14 However, you remember Michelle Foss's
15 slide with the pros and the cons this morning. As
16 we started to address this issue our group found
17 it was much easier, regardless of the option
18 you're talking about, to come up with cons than to
19 come up with pros.

20 So we've basically come down to this
21 version of the Hippocratic Oath, which was "first
22 do no harm." Avoid open access conditions that
23 would make projects uneconomic.

24 We want to see LNG projects come into
25 California, coming into the west coast. So we

1 would leave you with this thought. We are
2 appreciative of the fact you've given us an
3 opportunity to provide written comments and I hope
4 by the time we get to the 15th we can provide some
5 additional insight on this point, but this is
6 where we are as a matter of consensus within the
7 group at this point.

8 I would say we are very happy that you
9 are addressing this issue, it's a difficult issue
10 and we're going to be very happy to see the result
11 you come out with.

12 Next, terminal access to pipelines. I'd
13 like to take a moment to applaud the CPUC. The
14 CPUC has directed the California gas utilities to
15 insert into their tariffs something that was not
16 there before now -- open access provisions.

17 In CPUC Decision 0409022, the same one
18 that Jim Harrigan cited to you, adopted now a
19 little over half a year ago, the CPUC directed the
20 utilities to propose open access tariffs.

21 The utilities did so, SoCal Gas and
22 SDG&E's rule is call Rule number 39, it was
23 approved in March of this year, the utilities were
24 ordered to re-file the tariff with a variety of
25 modifications that the PUC directed the to make to

1 the tariff, the re-filing was done, standardized
2 contracts to implement open access were filed
3 along with the modified tariffs.

4 We are now awaiting approval by the CPUC
5 of the finalized, as modified per CPUC
6 instructions, tariffs and the standardized
7 contracts. When those are in place we will not
8 have gas stranded on the beach, or in the
9 production field in Central California, or
10 anywhere else where we have gas coming to the
11 California gas utilities. This is a very
12 important step the PUC has taken, and we applaud
13 the PUC for taking this step to, we believe,
14 assuring that when gas supply shows up it will be
15 interconnected to the gas utility systems.

16 Next, customer access to LNG supplies at
17 utility receipt points. As I mentioned, our
18 generation facilities are, without exception,
19 located in the SoCal Gas service territory. We
20 very much appreciate the service we get from SoCal
21 Gas.

22 Currently, under the SoCal Gas regimen
23 that is in place today, SoCal Gas customers, large
24 customers, non-core customers such as us, have
25 flexible access to gas supplies at all of the

1 utility receipt points.

2 Non-core customers can elect firm or
3 interruptible transmission service -- some of our
4 members take firm service, some take interruptible
5 service, depending upon their business
6 requirements and service needs.

7 Customers can shift nominations among
8 utility receipt points. There is great
9 flexibility. A couple of weeks ago LADWP had a
10 problem, there were two leaks at Intermountain
11 Power Project, shutting down a unit there.

12 At the same time Palo Verde was having a
13 problem. We started to have this perfect storm of
14 problems at various plants around the west. Basin
15 generation got LADWP through, they immediately
16 bought 105 million cubic feet for the day in
17 question, the supply showed up, we had the
18 nomination flexibility we need to get that kind of
19 supply on short notice.

20 The gas supply came in to southern
21 California, it was burned at the Department of
22 Water and Power generation stations in the basin,
23 we didn't have any problems.

24 Given the flexibility that customers
25 have under today's regimen in the SoCal Gas

1 system, not only can we get supplies when we need
2 it for reliability purposes, but we can take
3 advantage of changes in price differentials among
4 the various receipt points from which there are
5 deliveries into the SoCal Gas system.

6 This morning it was pointed out, as well
7 as this afternoon by Jim Harrigan, SoCal Gas has
8 good access to multiple supply basins around the
9 west. We'd like to see LNG be another point of
10 supply.

11 Given the flexible nomination structure
12 on SoCal Gas system, large customers can move
13 their nomination from point to point so that they
14 can take advantage of changes in pricing
15 differentials.

16 We are concerned, SoCal Gas has proposed
17 what they call a firm rights proposal in
18 Application number 0412004. We believe that this
19 is a solution in search of a problem. We are
20 content with the type of service in general that
21 we are getting now.

22 The proposal that SoCal Gas is making
23 would, we believe, deprive large customers, such
24 as electric generators in Southern California, of
25 the kind of flexibility that we enjoy currently.

1 Instead of having the flexibility to
2 move nominations from point to point in order to
3 take advantage of changing price differentials, in
4 order to maximize the gas to meet reliability
5 requirements we would be tied to specific receipt
6 points, and we would be impeded in that system to
7 others.

8 This would be especially injurious to
9 electric generators that as, in some instance
10 lower load factor customers need to maximize
11 flexibility. Viewing it from the standpoint of a
12 supplier, such as an LNG supplier, we think it
13 would also be injurious to them.

14 From their standpoint they'd want to see
15 as many customers wanting to come to them as
16 possible if they were offering the right price.
17 If you had just a select number of customers
18 controlling firm access rights to a given
19 supplier, such as an LNG supplier located in
20 Ventura County, those controllers of firm access
21 to that supplier would impede the customer's
22 access to a broader array of customers rather
23 than, as opposed to the system that we have
24 currently on the SoCal Gas system.

25 Recently there was a ruling by the

1 assigned Administrative Law Judge and the assigned
2 Commissioner in the case, postponing consideration
3 of the firm access rights proposal until sometime
4 in 2006 -- 2007 might sound better to us, but we
5 were happy with that.

6 Gas transmission and storage
7 infrastructure adequacy is another concern to us.
8 In general, yes, SoCal Gas has adequate
9 transmission capacity, in aggregate. But there
10 are location congestion problems.

11 One example, on the local transmission
12 system going down to Imperial Valley that John
13 Dagg mentioned this morning, there has not been an
14 upgrading of capacity.

15 Mexicali has come online as a
16 significant load on that transmission. It's
17 served by DGM, an affiliate of SoCal Gas. When it
18 was being proposed and when it came online we were
19 told that there was plenty of capacity on the
20 Imperial Valley system. It turns out there
21 wasn't.

22 And now, Imperial Irrigation District,
23 which of course provides generation resources to
24 the Imperial Valley, cannot get full, firm
25 requirement service from SoCal Gas because

1 Imperial Valley system is constrained.

2 Fortunately, the CPUC will be, this
3 summer, instituting a proceeding to examine
4 infrastructure adequacy on, among others, the
5 SoCal Gas system. And we look forward to raising
6 this issue.

7 There are other localized problems on
8 the SoCal Gas system. There are receipt points
9 where, as I think other speakers have pointed out,
10 the amount of incoming capacity has not matched
11 the amount of takeaway capacity. In many
12 instances that is absolutely fine, we do not need
13 to have a perfect match. But there are instances
14 of constraint that should be, in prudence,
15 examined.

16 Another topic for today is security of
17 supply. Currently the electric generators in the
18 SCGC group rely on a mix of solutions. A mix of
19 pipeline capacity, storage capacity, flexibility
20 on the SoCal Gas system to move from receipt point
21 to receipt point, and also we rely on the
22 responsiveness of the open gas market we have
23 today to assure us that, if we are willing to pay
24 the price, the supply will be there.

25 Our recommendation is that the

1 Commission continue to allow individual generators
2 to tailor their own solutions to security
3 problems. Contractual solutions that involve
4 transportation, contractual solutions that involve
5 supply.

6 Different solutions are going to be
7 appropriate for different generators depending on
8 their load configuration, so we would strongly
9 urge that you not adopt a one fix suits all
10 policy, but allow generators to tailor their own
11 solutions to their own situations.

12 Thank you very much for giving me an
13 opportunity to be with you today.

14 MR. MAUL: Okay, thank you, Norman.
15 Thank you very much, very helpful from a
16 customer's perspective. We'll hear now from a
17 different customer's perspective. We have Steve
18 Mussell, General Manager of Special Projects for
19 the US West Coast for Chevron Global Gas.

20 MR. MUSSELL: Thank you. I'm going to
21 try to multi-task here and find my Powerpoint
22 presentation at the same time. Here we go.

23 Thank you, Chairman Desmond,
24 Commissioner Boyd, Dave, Harvey and Monica for
25 giving Chevron the opportunity to make some

1 remarks today. And I also congratulate the people
2 on the webcast and in the audience here today.
3 It's a long day, and you've been a very good
4 audience so far.

5 What I'd like to do in the next few
6 minutes is talk about Chevron as a consumer of
7 natural gas in the state of California. First of
8 all, we hope that we're your neighbor here in the
9 state of California. Our headquarters are just
10 down the road in San Ramon.

11 We started her 125 years ago, and we are
12 a large producer of petroleum products. We market
13 them here, we produce oil and gas, and we have
14 cogen operations and power operations. And about
15 8,500 employees in the state.

16 We consume approximately 500 million
17 cubic feet per day of natural gas in the state of
18 California. That's, I think, roughly equivalent
19 to the summertime load in PG&E's system, if I
20 remember the number correctly. That 500 million
21 cubic feet a day is roughly split equally among
22 our refining and marketing, where we have two large
23 refineries, at Richmond and El Segundo, at about
24 500,000 barrels a day capacity. It's split also
25 with our producing operations in the San Joaquin

1 Valley, where we're the largest producer of crude
2 oil in the state.

3 And then the last third is in our cogen
4 operations, which produces steam for heavy oil
5 recovery in the San Joaquin Valley as well as
6 generating about 1,300 megawatts of power, which
7 is enough electricity to provide electricity for
8 about a million homes in the state.

9 So, I'm not sure, we used to be the
10 largest industrial customer, I'm not sure whether
11 I can still make that comment, but if not we are
12 one of the largest industrial consumers of natural
13 gas in the state.

14 My point here is we believe that LNG is
15 part of the solution. Because we are a large part
16 of the economy in the state, we provide jobs, we
17 provide motor gasoline, aviation fuel, and a
18 number of other products, what happens to the
19 state of California's economy is important to us.

20 And we believe that, looking at the
21 sources of LNG, at how much gas resources are in
22 the Asia Pacific Basin, whether it's in Indonesia,
23 Australia, or even South America, that those gas
24 resources should be made available to the state of
25 California.

1 Now, I want to recognize that demand in
2 the state of California has leveled off a little
3 bit, due to energy conservation, due to higher
4 prices, due to some industries leaving the state,
5 but long-term we see that trend will continue to
6 go up.

7 And at the same time, and I think it's
8 been said a number of times in earlier
9 presentations, that the deliverability of domestic
10 natural gas supplies as well as Canadian supplies
11 looks to us to be going in a downward direction.

12 So when you add those two up, we need to
13 find additional supplies of natural gas for the
14 state, and I believe that LNG needs to be a part
15 of that solution.

16 So California needs to support the
17 needed infrastructure in terms of re-gasification
18 terminals, in terms of pipeline rights of way and
19 pipeline tie-ins to the SoCal Gas and PG&E
20 systems, and that bringing in LNG and re-gasifying
21 it is going to benefit all of the consumers in the
22 state by providing another source of reliable and
23 energy efficient energy to the state.

24 I think the state of California should
25 look to the country of Japan for how the LNG

1 industry can peacefully co-exist. The LNG
2 industry is a major portion of Japan's economy and
3 energy supply, and they have figured out how LNG
4 can peacefully co-exist, it's safe and it's
5 environmentally friendly at the same time.

6 So all of these factors, from a producer
7 perspective as well as from a large consumer
8 perspective, adds up to us feeling that LNG must
9 be part of the solution. Thank you.

10 MR. MAUL: Okay. Thank you. Questions?

11 MR. MORRIS: I can't resist one
12 question. Norm, I could also address a response
13 to you, but Steve, Norm said that LNG suppliers
14 would welcome having many end users come to the
15 place where the LNG supply gas could be delivered,
16 and so we don't need to have firm transportation
17 rights worked out in the SoCal Gas system.

18 MR. PEDERSEN: That's not quite an
19 accurate paraphrase, Harvey.

20 MR. MORRIS: Well, you said there's no
21 problem that needs to be fixed right now.

22 MR. PEDERSEN: In our view suppliers
23 should want to have maximum access to their point
24 of delivery by customers. As far as their view, I
25 can't speak for what their view might be, and I

1 wasn't attempting to speak for their view.

2 MR. MORRIS: All right, well, I would
3 like --

4 MR. PEDERSEN: And as far as the
5 transportation, we have firm transportation, the
6 issue is firm access.

7 MR. MORRIS: Right. As a potential LNG
8 supplier, you have two potential projects, would
9 you agree with what Norm has said, or do you have
10 a different viewpoint?

11 MR. MUSSELL: I'm not sure it's terribly
12 different. I think the key is putting in the
13 infrastructure that allows LNG to be re-gasified
14 and injected into the existing system. Whether or
15 not, I think it's a separate question, Harvey,
16 whether or not that gas is sold to utilities who
17 then use it for core or non-core customers, or
18 whether there are non-utility customers who want
19 to buy that re-gasified LNG directly.

20 And I think the market should be open to
21 both, obviously to allowing customers who want to
22 buy direct, the market should allow that to
23 happen.

24 MR. MORRIS: All right, well, in terms
25 of the CPUC proceeding, do you think there's no

1 need at this moment to change the firm access
2 rights on the SoCal Gas system, or do you not have
3 a position on that?

4 MR. MUSSELL: I'm not sure I'm qualified
5 to state a company position on that. I think I'll
6 pass.

7 MS. SCHWEBS: You may not want to answer
8 this one, but I'll ask anyway. Does Chevron see
9 itself becoming an anchor customer of any of the
10 existing LNG terminal facilities proposed for
11 California?

12 MR. MUSSELL: Chevron clearly wants to
13 be able to both import as well as consume re-
14 gasified LNG in the state of California, and so we
15 are very interested in making sure that capacity
16 is available to be contracted, and we would intend
17 to be a party to that, yes.

18 MS. SCHWEBS: Could I just follow up
19 then, Chevron may purchase its own supplies, or
20 would it be in position to be a customer only?

21 MR. MUSSELL: I think the answer would
22 be both, but let me be clear that -- LNG that may
23 come into the state by one supplier, if it's
24 Chevron for example, doesn't necessarily have to
25 be contracted directly if Chevron is the consumer.

1 There's a difference between where the
2 physical gas flows and where the contractual
3 relations exist, and I think there are different
4 roles. As a supplier, that's a different role
5 than being, let's say, a terminal owner, which is
6 providing a service of re-gasifying the LNG, and
7 then marketing takes place in a different
8 structure, perhaps to different customers. So
9 there are different roles, not all one role.

10 MR. MAUL: Okay, Steve, thank you very
11 much. For our last speaker on our scheduled list
12 we have Marcellus Catalano, who is CEO of Alea
13 Trading. And obviously in the customer chain
14 between the terminal and the customer. Welcome
15 today.

16 MR. CATALANO: Thank you. I'd like to
17 thank the entire California Energy Commission for
18 allowing me to come today and give our perspective
19 on the LNG business.

20 Just quickly, an agenda. I'll give a
21 quick summary of who we are so that everyone has a
22 better understanding of what we are looking to do,
23 and then our perspective on trading in the Pacific
24 Rim. I'll briefly touch on open port access, of
25 course, and the advantages of trading firms to

1 California consumers.

2 Briefly, I know tomorrow you'll be
3 discussing more on security, but I'll very briefly
4 touch on that, and then wrap up with what we see
5 as a vision for California.

6 First of all, we created Alea Trading
7 back in 2003. We saw a business model for the
8 future that we thought we'd implement today. And
9 basically, to give you an understanding of where
10 we would fall, I think there's a misunderstanding
11 out there of where we are precisely as a company.

12 We would fall actually in the
13 international realm, where we would deal with
14 suppliers directly, take title to the possession
15 in a foreign port and deliver that to California,
16 and then thus give it off to an end consumer here
17 in the United States.

18 And that's actually embedded in our
19 mission statement, where we're looking to provide
20 the knowledge and expertise to domestic consumers
21 that we feel, their knowledge of what's happening
22 globally in liquefied natural gas, there's
23 definitely a lack of understanding at this point
24 with some of the smaller firms, especially, that
25 are consumers of natural gas.

1 So, how we intend to to that. We're
2 looking, primarily why we say we're a trading firm
3 is that we focus on the short-term market.
4 Briefly, someone touched on that earlier, which
5 means under two years. So anywhere from one cargo
6 up to two years.

7 So we'd be looking to address companies
8 that have an expected demand where they tend to
9 normally have a high price fluctuation, and we
10 would bring in various cargos to help ease that
11 demand and flatten the prices during those prime
12 peak periods.

13 Our perspective on LNG trading in the
14 Pacific Rim is where we feel California is in a
15 very favorable position geographically. And while
16 50 percent of the trading is done in the Atlantic
17 Basin, the other 50 percent is done in the Pacific
18 Basin, and thus there are spot cargos that are
19 trading hands as we speak throughout Asia.

20 Japan, of course, is a very mature
21 market and is very familiar already with short-
22 term and spot cargos, and it has helped to ease
23 some of the price fluctuations for them as well.

24 Certainly while most suppliers do prefer
25 the long-term contracts which of course are

1 required as you see by various investment
2 protocol, many of them are getting actively
3 involved in the short-term market as well.

4 They see that as a good way to become,
5 rather than being 80 percent or 90 percent
6 capacity they see that as being a way to approach
7 100 percent capacity.

8 So they are very willing to sell
9 occasional cargos, and various suppliers have
10 cargos available at different times, and it's just
11 a matter of having the knowledge of who has the
12 cargo at what time and at what price and if it's
13 compatible for California to bring it in.

14 We see that trend continuing, and we
15 feel that, as you start to look at the investment
16 going in to the supply side, global supply has
17 potentially -- it's been mentioned once already --
18 can exceed demand in the future.

19 And if that actually does occur, if that
20 shift changes, then the negotiating power will
21 also shift from right now, in today's market, of a
22 tight supply to one where it goes back to the
23 buyer again, and the buyers ultimately have more
24 negotiating power at the table.

25 Now what we've seen throughout the

1 United States as a whole, maybe not specifically
2 California so much, is that most consumers are not
3 looking to sign ten or 20 year commitments. Many
4 firms are looking for six months down the road,
5 next year, and on the supply side you're looking
6 for the long-term commitments.

7 And so we see that there's a gap right
8 there, and that potential gap will require much
9 time and resources from whoever gets involved in
10 that market. And so, as California consumers
11 enter the liquified natural gas market they're
12 going to be leaving the domestic behind.

13 The domestic market is one that
14 everyone's very comfortable with, they're very
15 familiar with the pipelines and the storage and
16 who has what at what prices.

17 When you turn to the global market
18 you're going to have to either spend the time or
19 resources or hiring a firm that understands that
20 already to address those same issues.
21 Specifically, what are the trends in shipping
22 costs, what are the prices in Asia, what are
23 prices in Europe.

24 Because those will directly affect
25 whether or not there's an interest in selling

1 supplies to California, and at what price.

2 As far as open access, you can imagine
3 our stance, the more the better. But
4 realistically, we know that too much open access
5 can potentially lead to problems as well. We feel
6 that an integrated mix of some sort of baseload
7 that maintains the everyday, day to day levels,
8 somewhere in the range of 80 to 90 percent, would
9 probably be very favorable.

10 Leaving some room in availability of re-
11 gasification for those times to address those peak
12 periods, to try to minimize that cost on the
13 consumer. Certainly from an investor's
14 perspective, we understand they want to recoup
15 their investment and their infrastructure, and
16 once that's done they do tend to favor spot
17 trading or short-term trading as a nice niche
18 market for them as well.

19 However, port investors, by nature, they
20 also seek the highest return on their investment.
21 And so, passing along those lower costs from LNG,
22 because LNG definitely is significantly cheaper
23 than what you're paying in natural gas prices
24 today, but they may not be willing to pass on 100
25 percent of the savings on to consumers.

1 As you heard today, the entire supply
2 chain is very tied together, in that they look at
3 the end consumer as the one who's going to foot
4 the bill for everything all the way up the chain,
5 and so I'm here to say that there's alternatives
6 to that as well.

7 If California does go with an open port
8 access, some sliver of it within it's overall
9 capacity, we feel that we can already take
10 advantage of the active trading that is going on
11 in Asia already. It wouldn't be something new for
12 a Japanese company or a Korean company to deal
13 with a firm like ourselves to either bring cargos
14 over on a regular basis or to just ease price
15 fluctuations.

16 And so California would be well-
17 positioned geographically of course to take
18 advantage of that. And certainly by doing that it
19 does eliminate those extreme price spikes and it
20 smooths out the supply and demand, creating a more
21 efficient market for consumers.

22 What are the advantages of trading
23 firms? trading firms, marketing firms, whatever
24 you might like to call us. We can certainly pass
25 on the savings to consumers. Why, of course, most

1 people ask, it's very obvious, we have the lower
2 overhead costs.

3 If you take a look at who's investing in
4 ports, who has an interest in investing in a port
5 in California, go up the chain, they tend to be
6 invested as well in one or two supply regions of
7 the world. Thus, they tend to have a strong
8 natural relationship to sell that supply to their
9 ports that they're also invested in as well.

10 Whereas a trading firm, we're not
11 necessarily tied to any one supplier, we've built
12 relationships with all suppliers. And so by doing
13 that we can search the globe for compatible
14 supplies, and also for the best price as well.

15 So it is very possible that, with
16 multiple factors in the supply chain, on a
17 particular time or month it's possible to be able
18 to get a supply from Africa or the Middle East and
19 actually bring that to California and have it be
20 cheaper than purchasing from a Pacific Rim
21 supplier.

22 An advantage that we certainly have on
23 the Atlantic Basin and on the east coast is that
24 we can aggregate smaller consumers. Many
25 consumers that have an interest in preparing LNG

1 from the source can't take the sheer volume.

2 Certainly here in California I believe
3 most of the firms probably can take an entire
4 cargo. But this works out quite well for the
5 smaller firms or other smaller firms in
6 California, maybe manufacturers or other clients
7 that may be interested in creating a buying block
8 of some sort and working with a firm that can
9 aggregate them together and pass those cost
10 savings on to them.

11 Now, as a flip side, trading firms are
12 also advantageous to the suppliers, because I
13 think -- the perspective out there in the
14 international community is that everyone's
15 building and investing in their infrastructure
16 because the US is the largest consumer of natural
17 gas.

18 And where I feel there's a gap in
19 knowledge is that they don't realize that while we
20 do have the largest demand, it's fragmented into
21 hundreds of companies, unlike Japan or Korea
22 where it's just a handful.

23 The LNG world has been used to dealing
24 in a world of just ten or 20 firms, but when they
25 start to enter into the US they start to question

1 how they're going to find new clients, other than
2 dealing with the firms they already know.

3 And so, for suppliers we see ourselves
4 as a one stop shop where we can be demand as well
5 as one payment as well.

6 And so we've built those relationships
7 internationally, and thus have the ability to save
8 California consumers the time and the money of
9 having to go out there and build these
10 relationships and understand that international
11 aspect of the business.

12 I'll very briefly address the security
13 concerns as it relates to trading firms. Of
14 course, first of all, if third party access is
15 allowed, that is maximum volume moving through the
16 port is never going to go over 100 percent,
17 obviously. So that's not going to change. We're
18 not going to have folks just sitting around out
19 there, floating around and waiting to get access
20 to the port.

21 Secondly, of course the Coast Guard has
22 been involved on the east coast, and they have the
23 authority and the ability, and we can leave that
24 in their capable hands.

25 And trading firms as well, we're subject

1 to the same licensing and fleet standing that
2 other firms are within the industry as well. And
3 what I've always found as an interesting side not
4 is that currently there are no American firms that
5 control any US LNG port capacity.

6 So lastly, what we see as a vision for
7 California is one where LNG can help the state
8 become more energy self-sufficient, help lower
9 costs to consumers, and eliminate those occasional
10 brownouts that we experience.

11 Furthermore, if you take that a step
12 further, potentially we can even be an energy
13 exporter to the neighboring states of Arizona and
14 Nevada that are growing at rapid rates.

15 If you take a look at Japan, just
16 briefly one more time, but a country that's
17 approximately the same size as California, much
18 more populous, but they have 24 LNG re-
19 gasification terminals. Certainly I don't think
20 California needs that many, but potentially a few
21 may benefit quite well.

22 And so lastly, I'll go ahead and wrap
23 that up by lowering those costs of business. As
24 someone down the street I believe has said, "let's
25 bring businesses and jobs back to California."

1 MR. MAUL: Okay, Marcellus, thank you
2 very much. Questions?

3 COMMISSIONER DESMOND: Just trying to
4 focus these questions quickly. I think it was
5 perhaps Paul Clifford or Richard Chinloy who was
6 speaking to us and talking about the US
7 representing 30 to 50 percent of the short-term
8 LNG trades, if I recall the figure correctly.

9 And I guess I'm asking, how far along is
10 the standardization of contracts and contract
11 terms, and when you talk about representing the
12 interests of consumers or the potential for that,
13 are you following a different definition of short-
14 term?

15 I mean, cargos meaning very short excess
16 spot capacity, or are you talking about trading in
17 the area where you're supplying for several
18 months, based on a series of shipments?

19 MR. CATALANO: Right. It can be
20 anywhere from one to multiple shipments of course.
21 And one of the things I did hear before was the
22 question of diverted cargos. And that's not
23 something that really happens very often.

24 I know that some of the super majors,
25 they do do that amongst themselves. The realm

1 that we're looking to do, actually it would be
2 fixed price, fixed volume, and even a set date.
3 And so the reliability would be very high.

4 In all diverted cargos it's currently
5 embedded already in LNG master agreements, and
6 what happens to happen under that type of
7 circumstance is all three parties involved would
8 have to accept it. And so it's not like a cargo
9 would be coming to the states and then all of a
10 sudden just diverted off to Japan or something
11 like that.

12 Only if the supplier, the marketer and
13 the consumer all agree, they all have to basically
14 check yes on that. And then what happens is all
15 three of them actually share in the profit off of
16 that diverted cargo as well.

17 I'm not sure if I answered all of that.

18 MR. MAUL: Okay. Well, Marcellus, thank
19 you for all of your comments. And that concludes
20 our customer perspective panel for this afternoon.
21 We sure appreciate you three as well, as we did
22 our three previous speakers, speaking from a
23 customer perspective.

24 We now actually are fairly close to when
25 we'll start the public comment period. And we do

1 have quite a number of blue cards here. So,
2 Chairman Desmond, if you'll put those in random
3 order and take them to the podium, Lee and I are
4 going to go change around the microphone and we'll
5 take them at the podium.

6 COMMISSIONER DESMOND: Very good. We've
7 received a number of comments, almost 16 of them
8 here. So I've shuffled them here. And the first
9 gentleman is John Ulrich from the Chemical
10 Industry Council.

11 If Mr. Ulrich would please come up? In
12 the interests of time we normally try to limit
13 these comments to about three minutes. And three
14 minutes and roughly 16 comments is going to take
15 us just beyond the 5:00 timeline, so --.

16 MR. ULRICH: Good afternoon, my name is
17 John Ulrich, I'm the senior consultant to the
18 legislative advocate for the Chemical Industry
19 Council of California.

20 On behalf of CICC I'm here to voice our
21 strong support for the development of LNG
22 facilities in California. The Chemical Industry
23 Council of California is a trade association
24 comprised of large and small manufacturers and
25 distributors.

1 In total we represent 105 facilities,
2 including manufacturing plants, research labs,
3 sales, service and distribution centers. All of
4 these facilities require reliable and
5 competitively priced energy. Or, in other words,
6 reliable and competitively priced natural gas.

7 The Chemical industry uses natural gas
8 as a combustion fuel during chemical operations,
9 as a raw material during chemical synthesis, and
10 indirectly the chemical industry is dependent upon
11 natural gas as the premiere fuel for generating
12 electrical power, which runs our pumps,
13 compressors, process safety equipment, and all
14 those things associated with a modern day
15 facility.

16 Recently Federal Reserve Board Chairman
17 Alan Greenspan proclaimed that the high oil and
18 high natural gas prices have put energy markets
19 under the greatest strain in a generation.

20 Here in California the strain has become
21 acute pain and our members are beginning to feel
22 it. A recent report by the California Energy
23 Commission states that California is overly
24 reliant on limited pipeline capacity to transport
25 natural gas into the state.

1 Further, California, the tenth largest
2 consumer of natural gas, produces only 16 percent
3 of that which it consumes. Moreover, the state's
4 electric grid operator, the ISO, reports that if
5 California experiences an especially hot summer we
6 may once again find ourselves without adequate
7 electrical supply.

8 This is extremely disconcerting to our
9 members and to the chemical industry in general,
10 who in the past several years have reported that
11 they have experienced tens of millions of dollars
12 in excess energy cost associated with high natural
13 gas prices and inadequate electrical power.

14 Building more gas-fired electrical power
15 plants is only part of the solution. California
16 must have reliable and competitively priced
17 natural gas. Fortunately, California can solve
18 its long-term energy problems with LNG.

19 California can and should build safe and
20 secure terminal ports and facilities to receive
21 and deliver LNG. Such ports would make
22 California's most important fuel source reliable
23 and competitively priced, a goal which must be
24 soon reached.

25 Safe and secure in-state storage of LNG

1 is the best recourse for preventing the kinds of
2 price spikes that we've seen in recent years.
3 Price spikes have crippled state's business and
4 created economic havoc with the residential
5 consumers alike.

6 The time is now to act. We thank you
7 very much for hosting this important workshop, and
8 we thank you for this opportunity to comment.

9 COMMISSIONER DESMOND: Thank you, sir.
10 Mr. Gates from the League of Food Processors. Is
11 Mr. Gates present? No? We'll move on.

12 Ernest Knolle with Knolle Magnettrans?
13 Welcome. Following Mr. Knolle we'll hear from
14 Rock Zierman from CIPA, and following Rock Steve
15 Arita from WSPA.

16 MR. KNOLLE: Thank you very much,
17 Commissioners, and ladies and gentlemen. My name
18 is Ernst Knolle, I'm the CEO of a small company,
19 Knolle Magnettrans, and we specialize in magnetic
20 levitation technology, and we research, we
21 develop, we patent, and we offer it for the
22 market. And we have four US patents issued, a
23 fifth one is now pending.

24 And the fifth one deals with LNG land
25 bridges. We went through a design phase,

1 calculated how an LNG land bridge would, could
2 possibly transport energy 800 miles from Prudhomme
3 Bay down to Valdes, and then be shipped to
4 California at a rate of 30 million tons per year.

5 And that would require about 20 LNG
6 ships in continuous rotation between Katook (sp),
7 California and Alaska.

8 Now, the main thing you should keep in
9 mind, the world throws away in oil fields some 15
10 trillion, that's 12 zeros, gas gets just thrown
11 away. And of course the rest of the world hates
12 America because America is the largest one.

13 America throws away in Alaska four
14 trillion, twice as much as there is gas in
15 California. It's just simply thrown away.

16 But with this invention of the LNG land
17 bridge, and I have a disclosure agreement here
18 with Chevron. The gentleman who was the speaker,
19 I don't know if he knows it, you never hear an
20 answer from these guys, you know, "oh yeah, we're
21 working on it" or thinking about it.

22 But anyway, we can bring that gas down.
23 We'll save the pollution, the world pollution, the
24 atmospheric pollution that's going on in Alaska.
25 We can have it cheaper, the LNG bridge alone only

1 costs about \$1.50 MCF.

2 Then that's without the feed cost. The
3 gas companies that throw away the gas, they say
4 "oops, hold it, we're not giving it to you for
5 nothing." But anyway, we could be way below the
6 cost that is presently being paid by California
7 consumers.

8 So we get it cheaper, we save energy,
9 and then we have lots of gas to convert automobile
10 internal combustions. We can have energy engines,
11 we can manufacture the hydrogen, and that's my
12 message.

13 And I appreciate very much the coming,
14 and --.

15 COMMISSIONER DESMOND: Thank you. Is
16 Mr. Zierman from CIPA here? No? Steve Arita?
17 Following Steve we'll hear from Barbara LeVake,
18 and following Barbara, Jesus Arredondo.

19 MR. ZIERMAN: Good afternoon, Chairman
20 Desmond, Commissioner Boyd. For the record, my
21 name is Steven Arita with the Western States
22 Petroleum Association.

23 On behalf of WSPA we appreciate the CEC
24 and the CPUC for conducting this joint workshop to
25 facilitate a foreign policy discussion on the

1 economic, environmental and the energy benefits
2 that LNG will provide to the state of California.

3 Today my comments will focus on three
4 main points. The need for LNG to satisfy
5 increased energy demand, the need for LNG
6 infrastructure in the west coast, and the progress
7 on LNG safety considerations.

8 First of all, given the strong growth in
9 natural gas demand, not only in California but
10 also in Nevada, Arizona and the Pacific Northwest,
11 the siting of LNG facilities on the west coast is
12 critical towards meeting the energy demands of the
13 western states.

14 The development of non-traditional
15 supply sources such as LNG, as well as the
16 development of in-state production capacity, will
17 be critical to meeting these demands. And also
18 the need to address critical energy infrastructure
19 issues is equally important.

20 Infrastructure issues such as the
21 development of additional interstate pipeline
22 capacity from Canada, the Southwest, and the Rocky
23 Mountains, and operational flexibility to utilize
24 in-state storage.

25 The Governor has stated that he supports

1 efforts to expand the state's energy capacity by
2 permitting new LNG facilities in California or in
3 cooperation with Mexico.

4 In that regard we would urge the CEC to
5 follow through on the Governor's position, and
6 ensure that LNG facilities are given a fair and
7 robust consideration in the development of
8 California's future energy and infrastructure
9 needs.

10 Secondly, for LNG, WSPA supports
11 promoting the installation of LNG facilities in
12 strategic market locations. Adding a commercially
13 significant volume of LNG to the energy supply mix
14 will enhance supply alternatives and may serve to
15 minimize market volatility.

16 In fact, the CEC estimates the
17 completion of one or more of the currently
18 proposed west coast LNG facilities could add in
19 excess of one billion cubic feet per day of
20 additional supplies.

21 Thirdly, we would just like to comment
22 on the extensive safety record associated with the
23 handling, transportation and use of LNG. In fact
24 the CEC's own recently published safety report
25 entitled "International and National Efforts To

1 Address the Safety and Security Risks of Importing
2 Liquefied Natural Gas" significantly advances our
3 knowledge and understanding about the safety of
4 LNG.

5 And according to the report, equipment
6 and procedures, as well as potential safety risks,
7 are constantly being evaluated.

8 So, in closing, WSPA strongly supports
9 the expansion of a balanced energy base, one that
10 is reliable, cost-effective, and a product of
11 sound science, that is investment friendly, and
12 supports environmental improvements. LNG provides
13 all of these benefits to the state of California.

14 Thank you for the opportunity to provide
15 these comments here today.

16 COMMISSIONER DESMOND: Thank you, Mr.
17 Arita. Ms. Barbara LeVake? Is she still here?
18 No?

19 Mr. Jesus Arredondo, representing Cal
20 Case. And I'm going to read a question from the
21 audience, and then we'll hear from Mr. Bob Hoffman
22 from Energy Dynamix after.

23 MR. ARREDONDO: Chairman Desmond,
24 Commissioner Boyd, Dr. Maul, thank you for the
25 opportunity. Good afternoon to everyone.

1 My name is Jesus Arredondo, and I'm the
2 Executive Director for Cal CASE, Californians for
3 Clean, Affordable, Safe Energy. Cal CASE is a
4 coalition composed of 60 statewide business,
5 consumer, and agriculture membership organizations
6 that are concerned about the state's energy
7 future.

8 Our coalition members are located across
9 the state. Some of them are in the audience
10 today, and some of them will be submitting
11 comments in writing to you.

12 As a coalition our mission is to help
13 educate the public about the benefits of LNG, and
14 how allowing the siting of LNG in California could
15 benefit all of us as ratepayers, in all ratepayer
16 classes.

17 Paramount in this education process is
18 the consideration of a few simple facts that
19 always need to be brought to the forefront. One
20 is that California is the tenth largest natural
21 gas consumer in the world. And we produce only a
22 fraction of what we need on a daily basis and on
23 an annual basis.

24 With a good chunk of our electricity
25 being produced from gas-fired generation, we heard

1 earlier today, natural gas is a critical component
2 to that electricity production for the state of
3 California.

4 And even as we consider engaging in
5 conservation and engaging in renewable efforts,
6 which we agree is critical and something that we
7 need to do. A number of experts have told us and
8 have testified to the fact that natural gas is
9 going to continue to be one of those baseload
10 generation necessities for the state of California
11 and throughout the west.

12 Along with the rest of the west, as
13 California's demand continues to increase in the
14 years to come, what we need to think about is the
15 fact that we need to diversify that supply of
16 natural gas.

17 As the sixth largest economy in the
18 world, we need to always be aware of that, and
19 that's going to help us keep our competitiveness
20 and its going to keep our ability to bring
21 businesses to the state of California.

22 Thank you for the opportunity to speak
23 to you today, Cal CASE encourages you to support
24 LNG siting in California. Thank you.

25 COMMISSIONER DESMOND: Thank you. The

1 question I've received, the individual is not
2 identified but let me read the question. It was
3 addressing Mr. Morse and his presentation of this
4 morning. Is he still here? He just left. Okay.

5 Let me read a second question then, to
6 Mr. Jim Jensen. The question was "given history
7 and energy markets, airlines, telcom, why is LNG
8 infrastructure different? That is, why should we
9 not expect a capacity surplus with impacts to
10 global LNG prices by 2015 to 2020."

11 MR. JENSEN: Why should we not expect a
12 reaction in prices, is that the question?

13 COMMISSIONER DESMOND: The question is,
14 "given history and energy markets, airlines,
15 telcom, why is LNG infrastructure different? That
16 is, why should we not expect a capacity surplus
17 with impacts to global LNG prices by 2015 to
18 2020?"

19 MR. JENSEN: Well, I think, the energy
20 industry is almost split along religious grounds,
21 between those who believe that there are shortages
22 in the future, and those who believe there are
23 surpluses.

24 At the moment, the shortage people seem
25 to be in control. So, in a sense, if you believe

1 that the direction of things is only going to be
2 up, then obviously there are problems forever and
3 ever.

4 I might point out an interesting thing.
5 We talk a lot about \$7 gas. The oil companies,
6 when they're doing their planning, don't believe
7 in \$7 gas. The companies, in their international
8 planning, use what is called mid-cycle pricing.

9 That says that the risk of a downside,
10 in pricing terms, is so severe that they use a
11 much lower price to justify projects.

12 And these things are well kept secrets,
13 and I don't know what they are right now, but I
14 think one of the majors just got up to \$3 an MCF
15 in the US conservatively, and, you know, \$20 to
16 \$25 oil is still in the ballpark.

17 What, the oil companies don't believe
18 these prices, they're not prepared to invest at
19 them, so there's a chance that they'll go down.

20 But if you are a conservative supply
21 side guy, as I am, you feel pretty well concerned
22 that things may not be as easy as they look. I'm
23 one who tends to be pessimistic but I fight my
24 pessimism because I'm wrong so much of the time,
25 so --.

1 COMMISSIONER DESMOND: Thank you. We
2 have coming up next Steve Heckeroth, followed by
3 Dorothy Rothrock. And then Mr. Berger following
4 Ms. Rothrock.

5 MR. HECKEROTH: I'm Steve Heckeroth,
6 thank you very much for this opportunity. I have
7 been concerned about all fossil fuels since the
8 1971 fossil fuels peak and -- okay.

9 Oil discoveries peaked in 1930, oil
10 extraction peaked in 1970, and the reality check
11 here is that we don't really produce oil, it was
12 produced by the sun over a period of millions of
13 years in geologic events.

14 And oil production has been declining at
15 two percent per year since 1970, and imports have
16 been increasing at four percent.

17 This is what it looks like on the world
18 scale. These are, the range in this gray area is
19 the range of forecasts from as soon as 2005 when
20 world oil is going to peak. The petroleum
21 industry is rather optimistic at 2020 to 2040.

22 The reason why I bring up oil is that I
23 think it's a trial run for natural gas. You can
24 see where the reserves are, 27.6 percent is in
25 Russia, 15.5 is in Iran, 15 percent is in Qatar.

1 And as you can see down below, these LNG
2 trains are about \$5 billion each. I think we can
3 probably look at some other alternatives.

4 And here's the fossil fuel future. It
5 looks at a finite supply, ugly infrastructure,
6 polluted air, and climate change, extraction,
7 devastation sites.

8 And the advantages of distributed
9 generation, using solar energy, which is really
10 the source of all of the energy anyway. And see,
11 there's all the disadvantages of LNG and fossil
12 fuels in general, and all the advantages that you
13 can see there.

14 And if the externalities are included in
15 any of these calculations, PV is already
16 economically feasible right now, because all of
17 these things aren't included in the price of oil,
18 not to mention maintaining what one politician
19 called "our oil" in the Middle East.

20 Some more things on the solar solution.
21 A report just came out from the CEC that said that
22 there was 17 million megawatts of potential solar
23 energy in California.

24 And I'll wrap up right now. Please make
25 the Governor's pledge come true. Support SB 1,

1 it's up for a vote this Friday. Thank you.

2 COMMISSIONER DESMOND: Thank you. Ms.
3 Rothrock? And then I'll read another question.

4 MS. ROTHROCK: Good afternoon. My
5 name's Dorothy Rothrock, I'm Vice President of
6 Government Relations for the California
7 Manufacturers Technology Association.

8 Manufacturers in this state strongly
9 support policies that encourage investment in new
10 energy supplies. The industrial base of the state
11 is still suffering extremely high prices, high
12 electricity costs, from the 2001 energy crisis,
13 and will face losses in the future if energy
14 supplies don't keep up with demand.

15 The high wage high benefits jobs created
16 by manufacturers won't be available in California
17 unless state policy secures reliable and
18 affordable supplies.

19 LNG is essential to keeping electricity
20 prices low and ensuring reliable supplies of power
21 to California homes and businesses. This is
22 especially true here in California where more than
23 40 percent of the electric generating capacity is
24 fueled by natural gas.

25 In fact, Dr. Phil Romero, who was the

1 former Chief Economist to Governor Pete Wilson and
2 currently Dean Emeritus and Professor of Business
3 Administration at the University of Oregon, has
4 studied the economic impact of increasing by just
5 ten percent the amount of natural gas supply
6 available to this state.

7 An amount that would be possible through
8 just one or two terminals being proposed. He
9 estimated prices would decline ten to 20 percent.
10 The effect of just a ten percent decline would
11 increase the gross domestic product, employment,
12 and household incomes of the state.

13 Employment increases from this decline
14 would constitute between two weeks to two months'
15 worth of employment growth for the entire economy.

16 A 20 percent price decline would boost
17 the state's annual economic output by some \$4.6
18 billion. This in turn would increase state tax
19 revenues by some \$300 million a year.

20 For California residents it would help
21 to create as many as 55,000 new jobs, and it would
22 save the average family more than \$200 a year.

23 Moreover, natural gas is a clean burning
24 fossil fuel that can be safely and securely
25 delivered in California. During the past 45 years

1 more than 33,000 carrier voyages have occurred
2 covering 60 million miles around the globe, all
3 without a major incident.

4 Thanks for your interest in this topic.
5 It's so important to California manufacturers,
6 agriculture, businesses, and consumers. We urge
7 state policy makers to come to a positive
8 conclusion about LNG and its critical role in the
9 future of California's economy. Thank you.

10 COMMISSIONER DESMOND: Thank you. Mr.
11 Hoffman?

12 And following Mr. Hoffman will be Mr. Jay Berger.

13 MR. HOFFMAN: Good afternoon and thank
14 you for letting me speak here today. I'm Bob
15 Hoffman, I'm with Energy Dynamix Corporation, an
16 independent energy consultant.

17 I'm here today representing Peru LNG,
18 and I'm going to be painfully brief because it's
19 very late. We filed, or, I'm sorry, Peru LNG sent
20 a letter of comments dated May 25th, I assume it's
21 going to be on the website, so I'm not going to
22 bore you and read it right now, you can read it at
23 your leisure.

24 Just a highlight of a point that was
25 made in the letter is we feel that LNG addresses

1 resource adequacy and having alternate supplies.
2 LNG is similar to a pipeline, we've heard that
3 today. And we view LNG coming from Latin America
4 to be the American Pacific source of LNG, which is
5 a complement to the Asian Pacific supply. So it's
6 another diversity play.

7 The main reason I wanted to get up here
8 and speak today is just to direct Mr. Jim Jensen's
9 comments here earlier on Peru, when he said that
10 he heard in the trade presses -- and one thing I
11 know you should never believe is what you read in
12 the presses -- that Peru had committed its natural
13 gas to Lazaro Cardinas, or the western Mexico end
14 uses.

15 And I just wanted to go on the record to
16 say that Peru LNG informed me today, I called them
17 on that, that they have not made any commitment of
18 any sort to anybody of this nature. They are in
19 discussion.

20 Just a couple of facts. They are
21 currently flowing from the Camisea (sp) gas field,
22 which is about ten trillion cubic feet, currently
23 flowing in Peru 80 million a day, and with plans
24 for gasification of 620 million cubic feet a day,
25 which is a single train, which Mr. Jensen had

1 correct, about 4 million metric tons a year, about
2 60 cargos a year.

3 So I just want to clarify the record on
4 that. Thank you very much.

5 COMMISSIONER DESMOND: Thank you. Mr.
6 Berger?

7 MR. BERGER: Hi, I'm Jay Berger, I own a
8 business called Innovative Marketing in Oxnard,
9 California, where a couple of these deep water
10 ports are planned.

11 And it's kind of exciting for me to be
12 here and talk to you today. If you haven't heard,
13 they revealed who Deep Throat was, and it's
14 exciting to be here watching government in action
15 and seeing how everything's in the public and we
16 have a chance to speak to all these issues, so --.

17 I've been watching you guys kind of
18 squirm a little bit in your seats, and I think
19 you're sitting on those hard metal chairs and I'm
20 sitting out here in this nice, comfortable thing.
21 And I appreciate your service -- I don't think you
22 took a break all day, did you?

23 All right, so I notice here that this
24 workshop reinforces the state's desire to provide
25 broad energy choices to consumers. And at the

1 same time the environmental, public health and
2 safety requirements. "The state must also
3 encourage private companies to invest in
4 California in a manner that meets consumer,
5 environmental, and public health and safety
6 needs." And that's a lot to accomplish, and I
7 congratulate you for even trying.

8 My business is in Oxnard, I'm the
9 President of Innovative Marketing, and we
10 specialize in non-profit association and event
11 management. In two of my capacities I'm having
12 occasion to become more and more aware of the
13 issues surrounding the use of energy and the
14 limited number of options available to us to solve
15 the lingering crisis of another energy shortage.

16 One of my capacity's is as the executive
17 director of the World Affairs Council of Ventura
18 County. This organization is non-profit and non-
19 partisan, and our mission is to evaluate and
20 inform citizens about the importance and relevance
21 of international affairs and the global economy on
22 our lives.

23 Another capacity that I fill is as the
24 executive director of Double E Expo, an exposition
25 merging consumers and industry in an effort to

1 promote the efficient use of energy. Not only
2 will we be certifying installers and vendors of
3 energy efficient products, but we will be
4 promoting an "ask your vendor" campaign geared to
5 convince consumers about energy efficient products
6 they can specify during construction projects.

7 This LNG issue is of particular interest
8 because it is an ideal intersection of the way
9 that the global economy can have a positive and
10 lasting impact upon the lives of Californians.

11 Right now, a majority and increasing
12 amount of California's energy comes from the
13 natural gas, which burns cleaner than oil or coal,
14 and is abundant around the world. As we know,
15 even most newly built or proposed power plants for
16 California are fueled by natural gas.

17 A significant issue to consider,
18 however, is the reality that California does not
19 produce most of the natural gas it consumes. That
20 is why we are compelled to import natural gas from
21 Canada and other states through a handful of
22 pipelines.

23 Many energy experts believe liquefied
24 natural gas can make an important and positive
25 contribution to the future of California, and I

1 agree. To this end, BHP Billipin (sp), an
2 Australian company, with access to substantial gas
3 reserves, is proposing to locate an LNG about 14
4 miles from my office.

5 This gas would be transported from
6 Australia as LNG and then converted back to
7 natural gas offshore and piped into California's
8 network of gas lines. Am I done? Well, thank you
9 for the opportunity, and good luck.

10 COMMISSIONER DESMOND: Before you leave,
11 if you'd like to take a few seconds here and make
12 any concluding remarks? Please go ahead.

13 MR. BERGER: Thank you. Well, in
14 conclusion I want to tell you that the World
15 Affairs Council hosted the former CEO of Chevron
16 Amoco during one of our meetings a couple of weeks
17 ago, and he mentioned that, as a friend of Saudi
18 Arabia, that the rumor is that there's about 25 to
19 30 years of oil that we can still use in this
20 country, as long as we keep our friendship with
21 that country.

22 But he said very assuredly that there's
23 at least 50 years of oil. The trouble is -- he's
24 a gentleman in his 70's, and 50 years to him is
25 probably a long time, because it's more than his

1 lifetime -- but what concerns me is if we don't do
2 something about our energy shortages right now, I
3 have a granddaughter who's almost three, and when
4 she's 50 years older she'll still not be my age.

5 So I just think, you know, there's a lot
6 that has to be done right now, and I hope you'll
7 make the right decisions. Thank you.

8 COMMISSIONER DESMOND: I appreciate
9 that. Thank you.

10 We have two final speakers, Mr. Dominic
11 DiMare, representing the California Chamber of
12 Commerce, and then Mike Bowman of the California
13 Business Roundtable.

14 MR. DIMARE: Good afternoon,
15 Commissioners. My name is Dominic DiMare. I'm
16 the Vice President of Government Relations for the
17 California Chamber of Commerce, representing over
18 15,000 businesses, large and small, many of whom
19 are in the audience today and have been before you
20 here in California.

21 We believe that fuel diversity as well
22 as neutrality is a necessary component to the
23 state's energy policy. Neutrality is important
24 because, as we bring all these fuels and hopefully
25 LNG to the marketplace, they should all be allowed

1 to compete equally in the marketplace.

2 Therefore we support the development of
3 liquefied natural gas facilities in California to
4 enhance the availability of LNG for use in
5 commercial purposes here in California.

6 We believe also that conservation is an
7 important element in the state energy policy,
8 however, we don't believe that conservation alone
9 can get us out of the problems that face us and
10 particularly the energy crisis that looms ahead as
11 demand for energy exceeds our capacity to produce
12 it.

13 And that's why we support adding LNG to
14 our fuel diversity mix, to help us keep pace with
15 the increased demand for electricity, for
16 instance, that is in large part in this state
17 really quite dependent on natural gas.

18 Every reasonable analysis that we've
19 seen says that we face a looming energy crisis due
20 to the high consumption of natural gas, and
21 production levels that are not able to keep pace
22 with the growing demand.

23 Tight gas supplies have forced
24 businesses to deal with gas bills that are very
25 high, they've doubled in just the last four years,

1 and you add that on top of the electricity prices
2 here in California that can be as much as 50
3 percent higher than in our neighboring western
4 states, it puts a lot of cost pressure on
5 businesses here in California.

6 Again, something that we think that the
7 addition of LNG through the siting of facilities
8 here would help ameliorate.

9 We believe that without swift, decisive
10 action to counter the growing problem of demand
11 supply imbalance the economy will suffer.
12 Businesses will close and relocate to lower cost
13 states, jobs will be lost and tax revenues that go
14 along with those jobs and businesses will decline.

15 We believe that a wider variety of
16 energy programs in California that includes LNG
17 will help us deal with our demand supply
18 imbalances as they come up. LNG is available,
19 it's affordable, and every day there are thousands
20 more miles of safe journeys traveled with LNG.

21 So their safety record is fairly
22 impressive, given the extensive use around the
23 world. We don't need to go to the expense of new
24 distribution systems from scratch, we have
25 existing systems.

1 And we also believe though that the
2 existing systems could use some improvements, so
3 we also support the approval by the state of
4 upgrading our gas transmission lines as well.

5 And in closing, we meet here today, the
6 weather's turning hot, we keep our fingers crossed
7 that we don't face the same blackouts and
8 brownouts that we had a few years ago, again we
9 believe that adding LNG to the fuel diversity mix
10 will help ameliorate any potential problems that
11 we have in the future, will make energy more
12 reliable and less expensive over the long run, and
13 the important decisions that you make today in
14 siting LNG will have long-term implications that
15 we think will have benefits and an upside for the
16 economy here in California.

17 And so for those reasons we support the
18 development of LNG facilities here in California
19 and ask for your support as well, and thank you
20 for your time and patience.

21 COMMISSIONER DESMOND: Thank you. And
22 then lastly, Mr. Bowman. And while your
23 preparing, is there anyone else remaining who
24 wishes to make public comment or remark?

25 Okay, go ahead.

1 MR. BOWMAN: Good afternoon, my name is
2 Mike Bowman with the California Business
3 Roundtable. It's a non-profit organization
4 comprised of the chief executive officers of the
5 state's leading businesses.

6 Our members are committed to promoting
7 public policies that foster vigorous economic
8 growth and job creation, and a competitive
9 workforce.

10 While much has been accomplished
11 recently to better California's business climate,
12 more work remains to be done, specifically in the
13 area of energy.

14 There's no question that economic
15 vitality and growth require access to a reliable
16 and affordable energy supply. However, increasing
17 demand and a constrained supply have led to
18 escalating costs, which have put California's
19 economy at a severe disadvantage.

20 Last year the Business Roundtable
21 commissioned a study which analyzed the
22 competitive viability of the state's business and
23 regulatory climate. The study, California
24 Competitive Project, found the cost of doing
25 business in California was 30 percent higher than

1 in other western states, with energy costs being
2 127 percent higher.

3 Over the years neighboring states have
4 launched large scale public relations campaigns
5 aimed at recruiting California companies, most
6 touting attractive economic climates, including
7 lower energy costs.

8 As reliability continues to be of
9 paramount concern to business leaders, the state
10 must make every effort to establish reliable
11 energy future so we can attain and attract
12 business and jobs needed to remain competitive.

13 The Roundtable believes that the energy
14 crisis clearly established the need for a more
15 comprehensive long-term energy strategy.
16 Enhancing and diversifying our energy supplies,
17 such as LNG, should be part of that strategy.

18 These complex challenges are not solved
19 overnight. The Roundtable encourages the state to
20 continue to lead discussions that involve all
21 stakeholders, such as you're doing today, so that
22 we can develop sound strategies that will ensure
23 reliable and affordable energy supply for
24 everyone.

25 In a period of economic growth

1 businesses are finally confident enough to start
2 planning expansion and reassess where they are,
3 where they're going to go, and how to get there.
4 The question in California is whether we're going
5 to have the jobs here or elsewhere, moving
6 existing jobs outside the state.

7 The time to act is now. Thank you for
8 your time and attention.

9 COMMISSIONER DESMOND: I'd like to read
10 just one question into the record which we
11 received addressed to Mr. Morse, who is no longer
12 here at the moment and perhaps will respond. The
13 question was "how will variable power loads on
14 northern Mexico's Semptra-TransCanada pipeline
15 impact Blythe Ehrenberg prices, given that no
16 storage exists on the system?" So, that was the
17 question.

18 Before closing here, I'd like to turn to
19 my fellow panelists to see if there are any
20 additional remarks they'd like to make?

21 COMMISSIONER BOYD: Uh, no, I very much
22 enjoyed the day and look forward to hearing more
23 tomorrow. A few more comments tomorrow, and some
24 additional questions.

25 Maybe one thing, there's been talk about

1 renewables, and I know you and I, Chairman
2 Desmond, chair the same feeling, that none of this
3 we're talking about is at the expense of
4 California's renewable program and renewable
5 portfolio standard, which is the most aggressive
6 you can find anywhere.

7 So, the subject has come up a couple of
8 times today, there's been no criticism, but just
9 so the record reflects, this is not a quid pro quo
10 situation.

11 And I thank everybody and look forward
12 to tomorrow.

13 COMMISSIONER DESMOND: Great. Well, I'd
14 like to first thank the panelists that we had,
15 many of whom traveled many miles to be here today.
16 The audience, for sitting through what is clearly
17 a highly technical subject, yet critical to our
18 understanding and decision making process about
19 this issue.

20 And also to everybody who's still
21 listening or will be reading the testimony, the
22 transcript, at some point in the future. So
23 they'll see this thank you when they read it.

24 And of course the folks here right
25 behind me. And so, with that we'll conclude

1 today's workshop. We look forward to seeing you
2 tomorrow, and again we appreciate everyone's time
3 and attention. Thank you.
4 (Thereupon, the workshop ended at 5:04 p.m.)

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I, PETER PETTY, an Electronic Reporter,
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thereafter transcribed into typewriting.

I further certify that I am not of
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IN WITNESS WHEREOF, I have hereunto set
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